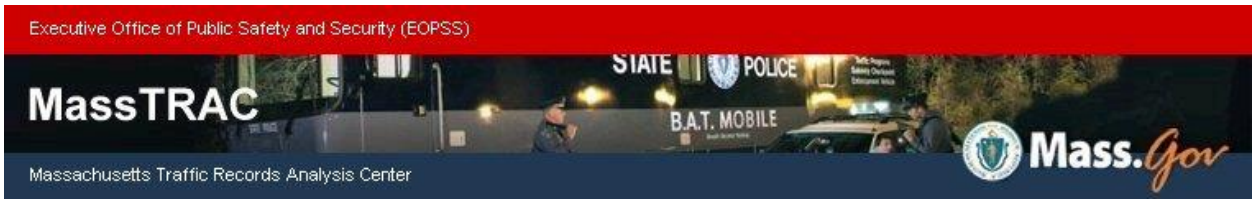

Massachusetts Traffic Records Analysis Center (MassTRAC)

MassTRAC User Guide

prepared for

Highway Safety Division

Massachusetts Executive Office of Public Safety and Security

prepared by

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INTRODUCTION TO MASSTRAC

Timely access to traffic records data is critical to efforts to improve public safety and, specifically, traffic safety. Access to these data enables safety professionals to identify safety problems and trends, and to respond to management, public, and media questions regarding traffic safety. Access to this data is essential to the Executive Office of Public Safety and Security-Highway Safety Division (EOPSS-HSD) at all times, particularly during its annual program planning, as new issues arise and priorities shift, and as it tries to conduct data-driven analysis of the effectiveness of its currently funded programs.

The Massachusetts Traffic Records Analysis Center (MassTRAC) provides EOPSS-HSD and authorized safety professionals with timely and reliable access to safety data through an interactive tool, enabling users to:

- Perform key spatial and statistical analytic functions on the available data;
- Spatially display the Crashes and Liquor License locations on a map;
- Perform spatial queries of Crash locations;
- Query the available data based on year, location and attribute;
- Generate statistical summaries and tabulations of the retrieved data;
- Evaluate data and relate it to underlying road network characteristics; and
- Generate standard and ad-hoc reports to be used in development of various highway safety plans.

All of the functionality in MassTRAC is described in the remainder of this User Guide.

Datasets

MassTRAC contains a number of datasets that are valuable to safety professionals, including:

- Crashes;
- Persons (Drivers, Passengers, and Non-Motorists) involved in the Crashes;
- Vehicles involved in the Crashes;
- Citations;
- Violations listed on the Citations;
- Alcohol (Liquor Licenses and Last Drink); and
- Roadway characteristics, including speed limits and average daily traffic volumes.

Linkage

The data contained within MassTRAC is linked together into a single database, allowing queries to be performed across the datasets.

- Crash locations are determined by the Massachusetts Registry of Motor Vehicle (RMV) based on the text descriptions in the Crash report. This location can be either along a road or at an intersection. Only approximately 90% of the Crashes are accurately located (i.e., given a latitude/longitude coordinate).
- Each Crash is linked directly to the Persons (Drivers, Passengers, Non-Motorists) and Vehicles involved in the Crash.
- Crashes and Citations are conservatively linked based on driver's license, date and city/town. Only if there is an exact match on all three attributes will the Crash and Citation be linked.

- Citations are located at a point only if they are linked to a Crash and that Crash was located by the RMV.
- Alcohol-related data (Liquor Licenses, Last Drink) is not linked to Crashes or Citations.
- The roadway characteristics are associated within the underlying road network. If a Crash was located to a road segment by the RMV, the appropriate roadway characteristics are linked with the Crash. If a Crash was located to an intersection by the RMV, the roadway characteristics of all of the roads at that intersection as associated with the Crash.

ACCESSING MASSTRAC

MassTRAC is implemented as a rich internet application using Adobe Flex to provide an enhanced user experience with cross-browser compatibility, and improved response times.

To access MassTRAC, you need:

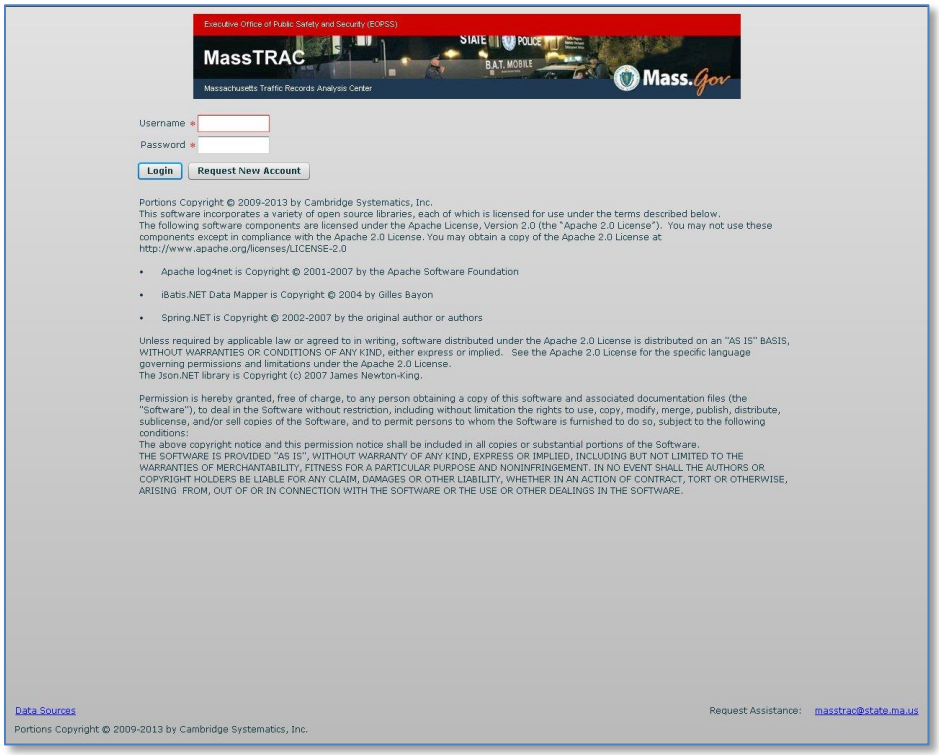
- A computer with broadband internet connection;
- A standard internet browser with Adobe Flash Player v10.4 (or greater) installed; and,
- A valid username and password.

MassTRAC will work correctly over a slower internet connect, however the speed of data download and display of data will be severely impacted.

MassTRAC is hosted by the Massachusetts Executive Office of Public Safety and Security (EOPSS) Office of Technology and Information Services (OTIS), and can be accessed at:

http://masstrac.chs.state.ma.us

Once MassTRAC successfully loads within Adobe Flash Player in your browser, the main login screen is displayed:

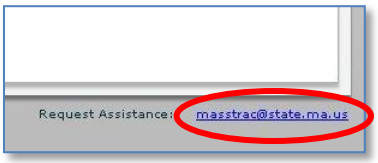


Do not use the browser 'Back' button as this will log you out of MassTRAC.

If you have a browser 'Pop-Up Blocker', either disable it or allow http://masstrac.chs.state.ma.us.

SUPPORT

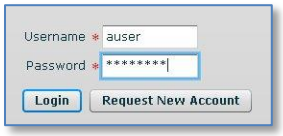
Additional support can be reached via e-mail by clicking the **Request Assistance** link in the bottom right corner of any Page:



An e-mail stub will be created in your e-mail program addressed to masstrac@state.ma.us. Type in your support question and send. A member of MassTRAC support team will respond as soon as possible.

LOGIN

Once MassTRAC successfully loads, the initial login screen is displayed allowing you to enter your username and password:



1. Enter your username and password, and then click **Login**.

If you do not have a MassTRAC user account, click **Request New Account** *and enter your information on the displayed form.*

The functionality you can access in MassTRAC is controlled by your user role:

	Regular	Advanced	Admin
Define Queries	✓	✓	✓
Analyze Query Results	✓	✓	✓
Generate Standard and Ad-Hoc Reports	✓	✓	✓
Access Open Crash Years		✓	✓
Create Ad-Hoc Reports			✓
Create Filters			✓
Maintain User Accounts			✓

MASSTRAC

Analysis functionality within MassTRAC is spread across several tabs, or Pages:

- *Summary*. Statistics on the returned datasets.
- *Records*. Access the raw dataset records.
- *Map*. Crashes and Liquor License locations spatially displayed on a map.
- *Tabulations*. Perform sophisticated analysis of the returned datasets.
- *Reports*. Generate standard and ad-hoc reports.
- *Documents*. Links to relevant documents and websites.
- *My Account*. Update your MassTRAC user account.

To navigate between the Pages, click any of the tabs displayed on the upper area of the screen:

Do not use the browser 'Back' button as this will log you out of MassTRAC.

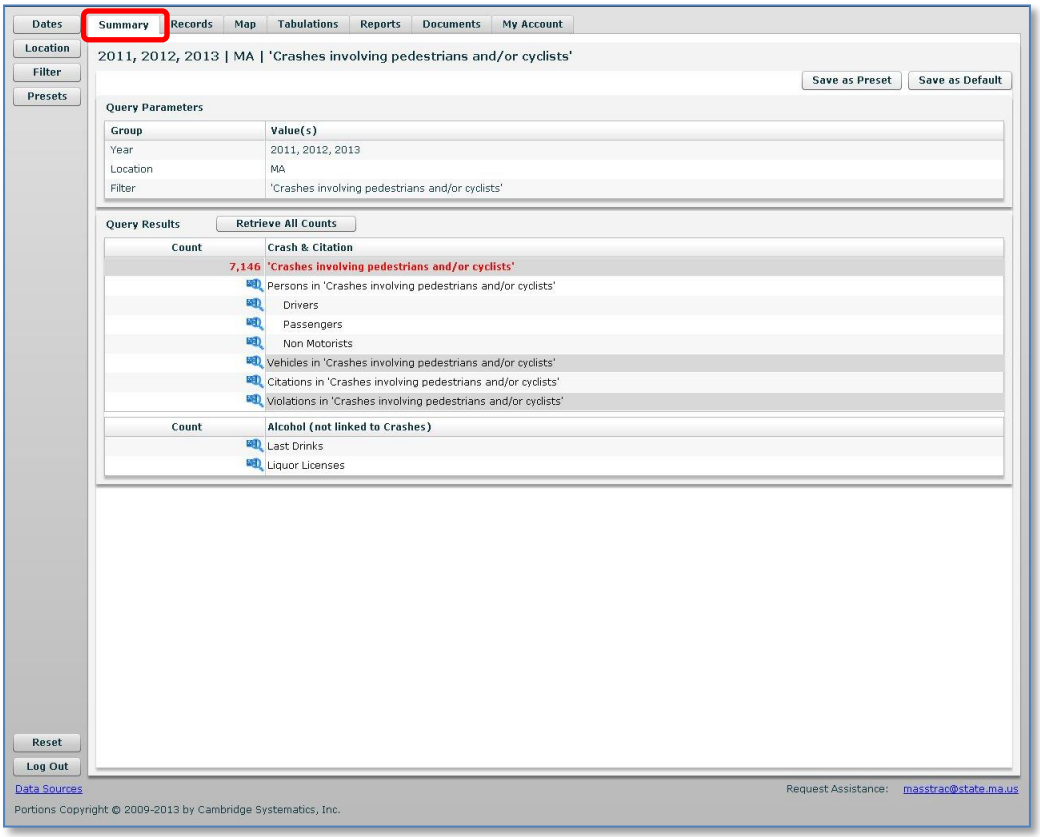
If you have a browser 'Pop-Up Blocker', either disable it or allow http://masstrac.chs.state.ma.us.

The following sections of the User Guide will explain how to use each Page.

Summary Page

Upon login, you are presented with a Summary Page which displays summary-level information based on the defined filter. The default filter that is executed is user-specific and can be updated at any point.

The Summary Page displays summary-level information about a particular data query, including Query Parameters and Query Results.



Query Parameters

The Query Parameters table provides details of the query that was executed.

Group	Detail
Year	The selected date range.
Location	The geographic location of interest (e.g., city/town, county, map extent, user-selection).
Filter	The name of the selected filter.

Query Results

The Query Results table displays the counts for each of the returned datasets. The number of returned datasets depend upon the parameters of the selected query.

*The primary dataset is highlighted in **bold red** font. All of the other datasets are determined based on this primary dataset.*

Type	Dataset	Description
Crash and Citation	Crash	The number of Crashes that meet the query parameters.
	Persons	Breakdown of the number of people involved in the Crashes.
	Vehicles	The number of Vehicles of involved in the Crashes.
	Citations	The number of Crashes that meet the query parameters.
	Violations	The number of Violations that were included on the Citations.
Alcohol	Last Drinks	The number of Last Drink citations for the selected year(s) and query location.
	Liquor Licenses	The number of active Liquor Licenses issued within the query location.

By default, only the count of the primary dataset is displayed. To display the count for another dataset, click the appropriate  *icon, or click* **Retrieve All Counts** *to display the counts for all of the datasets.*

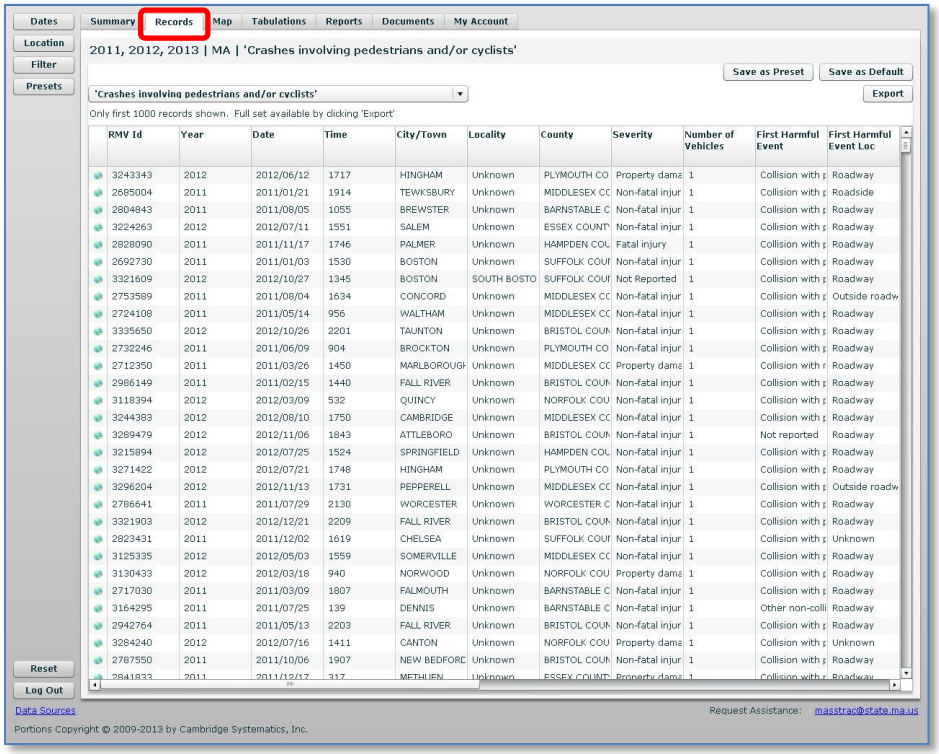
Records Page

When you run a data query in MassTRAC, you can select the Records Page to view the detailed Crash and Citation records which resulted from a specific data query.

No personally identifiable informations is included within the records..

To View Records

1. Click on the **Records** tab to view records details. This Page contains a table which displays the details of the records for any of the datasets which resulted from the selected query parameters:



2. Click on the drop-down box in the top left corner of the Page to select the datasets for which you want records to be displayed.

The list of available datasets depends upon the Filter being used.

When the dataset is displayed in the Table:

- The column order can be arranged by clicking on the column heading and dragging the column horizontally left or right.
- The table can also be sorted by clicking on the column header.
- The metadata for a particular attribute can be displayed by hovering the mouse pointer over the table column headings.
- As the table only displays a maximum of 1,000 records, at any time you can click **Export** to export the entire set of records from the selected table to a Comma Separated Value (.csv) file that can be opened in Microsoft Excel and saved to your local desktop.

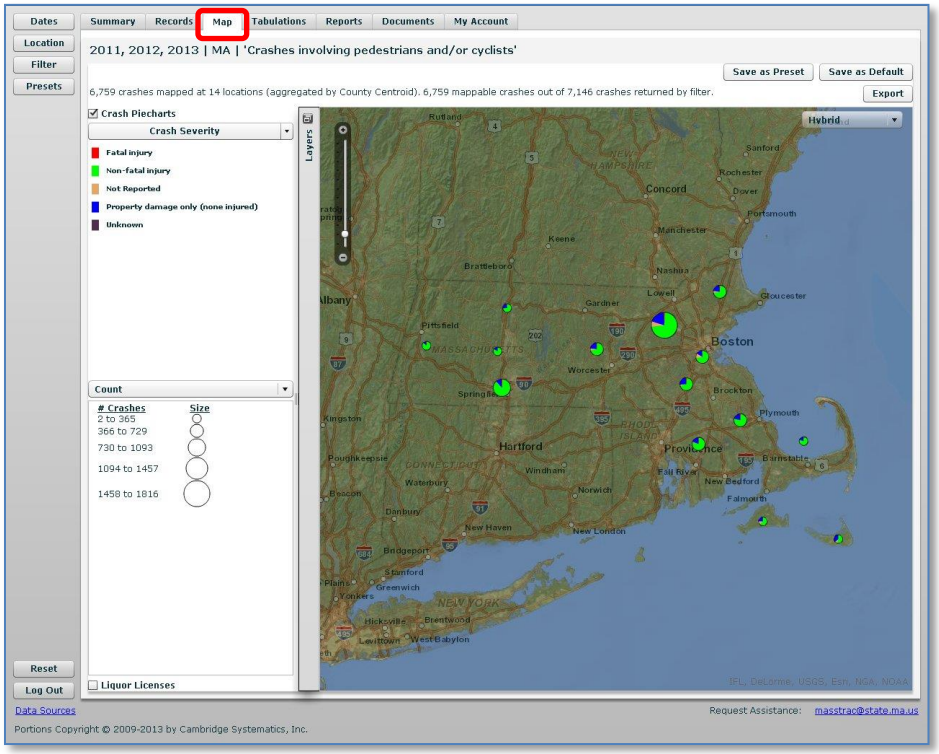
Refer to the Data Dictionaries at the end of this User Guide for descriptions of each of the attributes of each table.

Map Page

You can display the results of any query on a fully interactive map that displays specific Crash locations and/or Liquor License locations.

To View the Map

1. Click on the **Map** tab to view a map of the specific datasets that resulted from the most recent data query executed by the system:



   Crash locations are displayed on the map as color-coded piecharts scaled by the number of Crashes at that location. The location of individual Liquor Licenses are shown as white diamonds.

Map Extent

To change the extent of the displayed map:

1. Using the sliding scale in the top left corner of the map, either click on the "+" or "–" symbol, click and drag the arrow up or down, or use your mouse's scroll wheel to change the extent/zoom level of the map.
2. Click and drag the map in any direction until the desired area is displayed.

Basemap

MassTRAC provides access to a number of different map backgrounds, or basemaps:

Basemap	Detail
MA Major Roads	Major roads and highways in Massachusetts (from MassGIS).
MA All Roads	All roads, including local roads and highways, in Massachusetts (from MassGIS).
Streets	Detailed street-level information.
Satellite	Satellite (orthophotography) image of the area displayed on the map.
Hybrid	Detailed street-level information overlaid on satellite images.
Physical	Shaded terrain map showing elevations.

To change the basemap:

1. In the top right corner of the map, click on the drop-down box to select the required basemap.

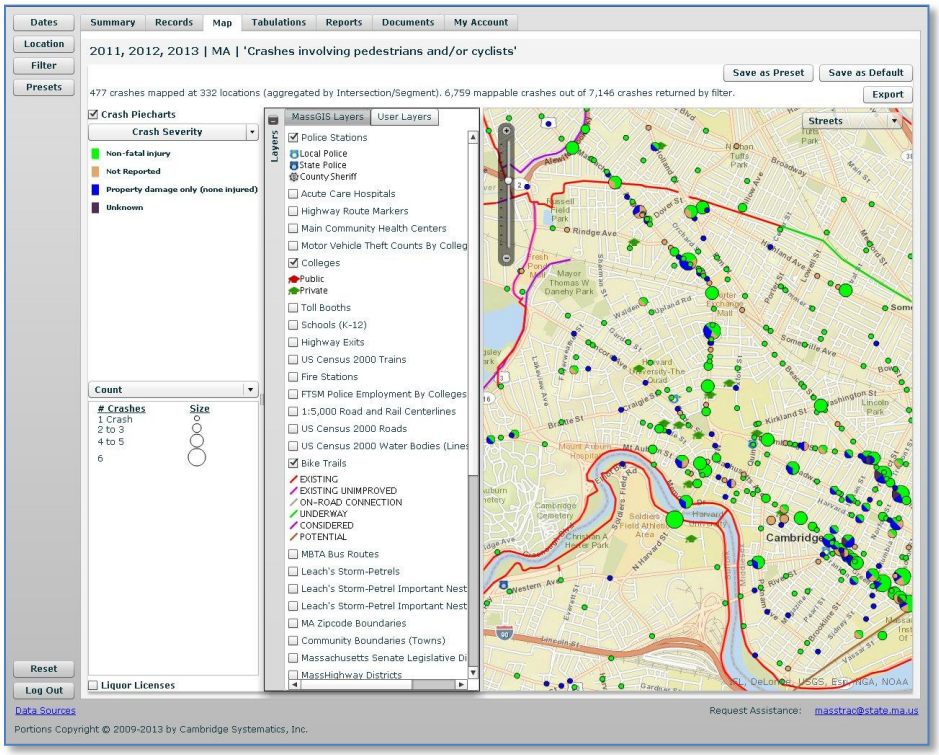
Additional Spatial Layers

MassTRAC allows additional spatial layers to be overlaid on top of the map, sourced from either MassGIS or from a local user shapefile.

MassGIS Layers

MassGIS hosts multiple spatial datasets that can be overlaid on the MassTRAC map. To display additional MassGIS layers:

1. Open the **Layers** panel to the left of the map.
2. Select the **MassGIS Layers** tab.

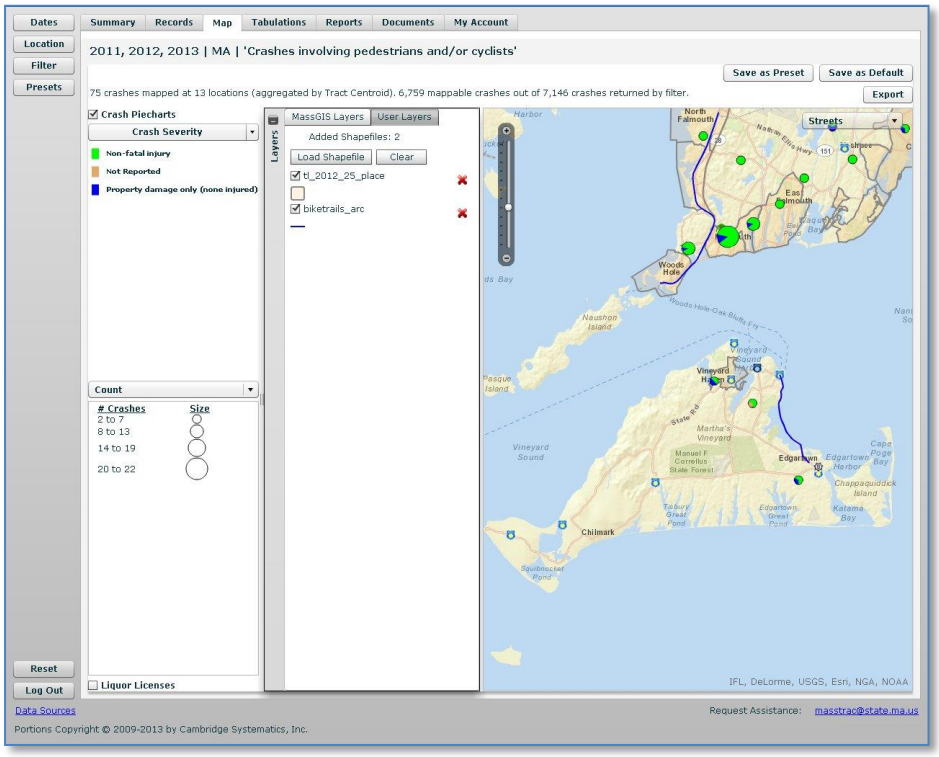


3. Check ☑ to display the required layers. Uncheck the box to hide the layers.

Users Layers

Additional spatial data stored in an Esri shapefile within a compressed Zip-format file can be uploaded into MassTRAC and displayed on the map:

1. Open the **Layers** panel to the left of the map.
2. Select the **User Layers** tab.
3. Click Load Shapefile. A File Dialog is displayed allowing the Zip file containing the shapefile to be selected.



4. The Zip file is uploaded to the MassTRAC server, the shapefile extracted and re-projected (if necessary), and displayed on the map.
5. Check ☑ to display the required layers. Uncheck the box to hide the layers.

> *Click ✖ to remove an individual User Layer. Click* Clear *to remove all of the User Layers from the map.*

Export

The map can be saved to an image file to allow printing and/or inclusion in reports:

1. Click Export in the top right corner to export the map to a JPEG (.jpg) image file.
2. Once the map image in generated, a dialog is displayed asking to save the image. Click Save to save the image, click Cancel otherwise.

Crashes

The Crash locations are displays as scaled, color-coded piecharts on the map. The Crash legend shows the color breakdown of the selected Crash classifications attribute values, and the range in the number of Crashes range represented by each size of piechart.

The legend is updated when the map extent changes which may change the number ranges for each size of piechart.

Display

To display the Crashes:

1. Check the ☑ **Crash Piecharts** checkbox at the top of the legend.

Size

To limit the number of piecharts displayed on the map, the Crash locations are aggregated to various levels of geography based on the extent/zoom level of the map:

- County
- City/town
- Tract (up to 10 Block Groups)
- Block Group (up to 10 Blocks)
- Block
- Intersection Segment
- (An individual) Crash location

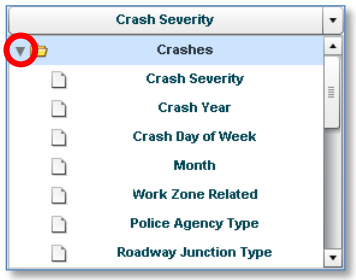
As you change the extent/zoom level, the Crash locations will be automatically be re-aggregated as necessary.

The text above the map shows the current aggregation level.

Classification

The piecharts can be classified by different attributes:

1. Using the drop-down box in the top left corner of the Page, click on the ▸ symbol next to the Crashes folder to expand the selection of available data attributes belonging to each category:

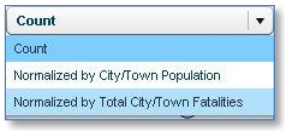


2. When you select a data attribute, the Crashes are re-classified on the map and the Crash legend updated.

Normalization

The size of the piecharts is based on either the total count or the total count normalized by an appropriate value (e.g., County/City Population). To change the piechart normalization:

1. Click on the drop-down box above the piechart size legend to the left of the map
2. Select the appropriate normalization factor:



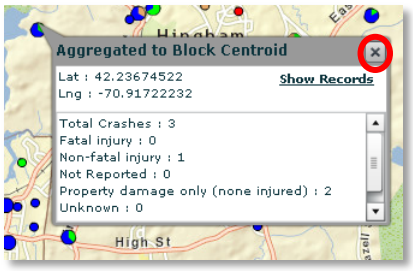
3. As the normalization factor is changed, the piecharts are redrawn.

Identify

At any time, you may click on any available Crash location piechart to view details about the specific Crash(es) represented. When you click on a Crash location a pop-up box displays the following information:

Entry Name	Detail
Lat/Lng	The Global Positioning System (GPS) location information which identifies the degrees, minutes, and seconds of latitude and longitude for the specific location point.
Total Crashes	The total number of Crashes for the specific Crash location data point.
[Data Attributes]	Based on the Crash data category selected, the applicable data attributes will be displayed.

To close the Information Box, click the close [X] button in the top-right corner:



Liquor Licenses

The Liquor Licenses returned by the query are displays as white diamonds on the map.

The displayed Liquor Licenses are those currently active within the selected location.

Display

To display the Liquor License locations:

1. Check the ☑ **Liquor Licenses** checkbox at the bottom of the legend.

Identify

At any time, you may click on any available Liquor License location to view details about the specific license represented:

Entry Name	Detail
Lat/Lng	The Global Positioning System (GPS) location information which identifies the degrees, minutes, and seconds of latitude and longitude for the specific location point.
Business Name	Name of the business at this location.

To close the Information Box, click the close [X] button in the top-right corner of the box.

Records – Map Interaction

The Records and Map Pages are linked together allowing:

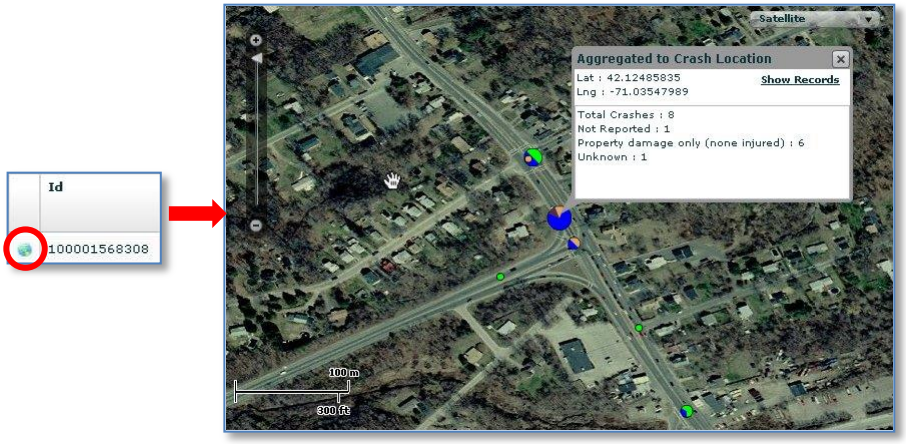
- The spatial location of a Crash record to be displayed on the Map.
- The attributes of a Crash location to be highlighted on the Records Page.

From Records to Map

1. To display the location of a Crash record from the Records Page, click on the globe symbol next to the appropriate record.

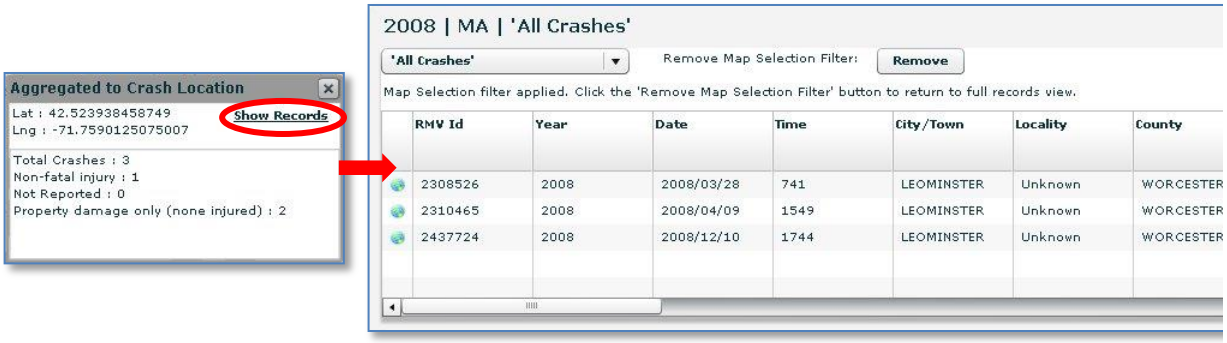
   The globe symbol is shown only for records that can be mapped. About 90% of the Crash records can be located on the map.

2. The Map Page will be displayed with the map zoomed to the location of the selected Crash and the information box displayed:



From Map to Records

1. To display the attributes of the Crashes at a Crash location displayed on the Map Page, click on the Crash location (piechart) to display the Information Box.
2. In the Information Box, click the **Show Records** link.
3. The Records Page will be opened and only the records at the selected Crash location will be displayed:



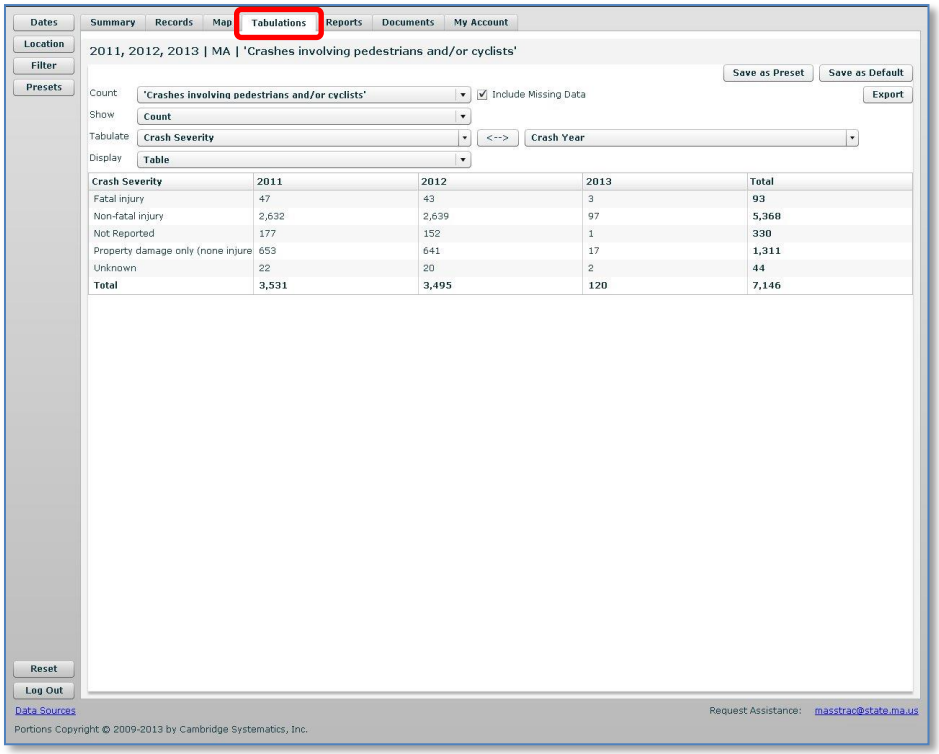
4. To redisplay all of the records, click **Remove** above the table.

Tabulations Page

You can generate cross-tabulations and various graphical representations (e.g., line, column, and stacked column charts) on the datasets which resulted from a specific data query.

To View Data Tabulations

1. Click on the **Tabulations** tab to view the Tabulations Page:



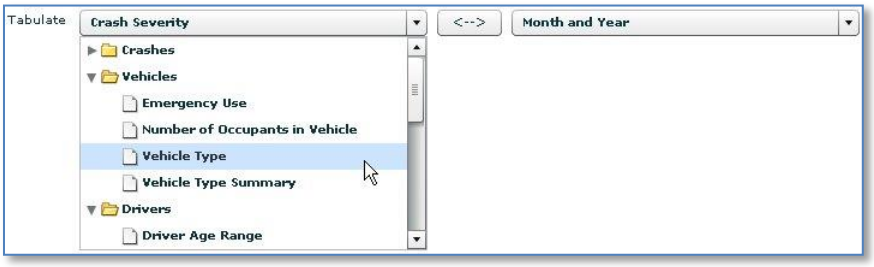
2. Click on the **Count** drop-down box in the top left corner of the Page to select a dataset to be tabulated.

> *The list of available datasets depends upon the Filter being used.*

3. Using the **Show** drop-down box, select the type of data to display in your table or chart:
   - Count
   - Row Percentage
   - Column Percentage
   - Normalized by State Population (per 100k)
   - Normalized by State VMT [Vehicle-Miles Traveled] (per 100M)
   - Normalized by Total State Fatalities
   - Normalized by County Population
   - Normalized by City/Town Population
   - Normalized by Total County Fatalities
   - Normalized by Total City/Town Fatalities

> *The actual items available in the **Show** drop-down box depend upon the parameters of the data query and the selected Table/Chart axes.*

4. Select the ☑ **Include Missing Data** checkbox if you wish to include records where no value was given. For example, if checked, a tabulation comparing Crash Year to Person Age Range would show an additional row/column called Missing Data when a person has no age reported.
5. Select the attributes to tabulate against each other using the **Tabulate** drop-down boxes.
   - In the left-hand drop-down box, click on the ▸ symbol next to the category heading (e.g., Crashes, Persons, Citations) to expand the selection of available data attributes belonging to each category. Select the Y-axis data attribute.
   - Use the right-hand drop-down box to select the X-axis data attribute.
   - If desired, you may click <--> to change the axis on which the selected attribute will be displayed:



6. Using the **Display** drop-down box, select the tabulation display format:
   - Table
   - Column Chart
   - Line Chart
   - Stacked Column Chart
7. If a Stacked Chart is selected and the X-axis is time series (e.g., Year, Month and Year, Week and Year), you can overlay the trendline on the chart by checking the ☑ **Show Trendline** checkbox.
8. When you have set all the parameters, click Tabulate to display the table or chart.

> *If a change is made to the parameters that would affect the dataset, the table or chart is removed and Tabulate is redisplayed.*

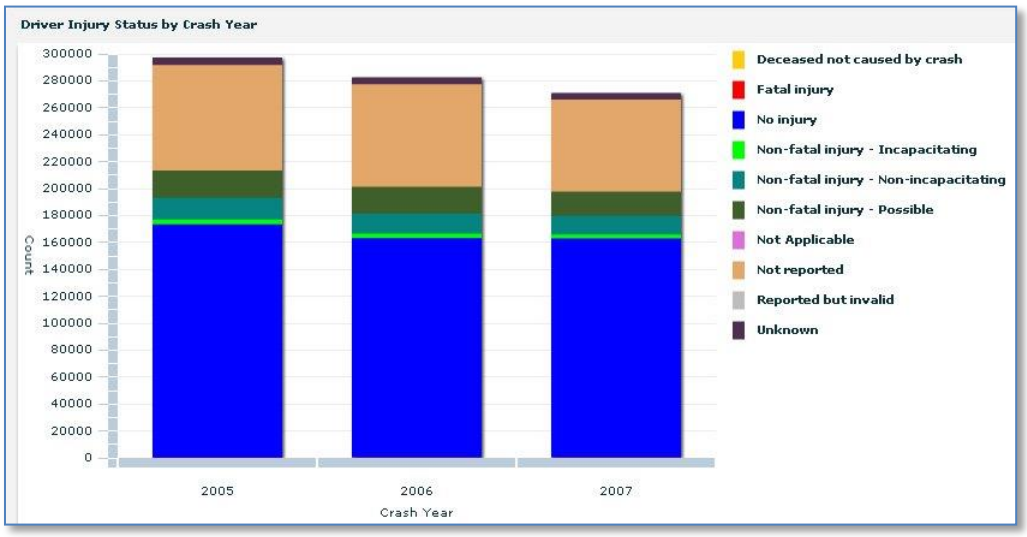
9. When the tabulation is displayed in Table format:

Driver Injury Status	2005	2006	2007	Total
Deceased not caused by cr	22	30	30	**82**
Fatal injury	287	284	279	**850**
No injury	173,148	162,847	162,541	**498,536**
Non-fatal injury - Incapacit	3,526	3,241	2,962	**9,729**
Non-fatal injury - Non-incap	16,002	15,133	13,803	**44,938**
Non-fatal injury - Possible	20,427	19,852	18,210	**58,489**
Not Applicable	1	1	0	**2**
Not reported	78,323	76,149	68,304	**222,776**
Reported but invalid	1	1	5	**7**
Unknown	5,539	5,059	4,845	**15,443**
Total	**297,276**	**282,597**	**270,979**	**850,852**

   - The column order can be arranged by clicking on the column heading and dragging the column horizontally in either direction.

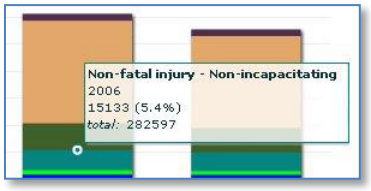
- You can sort the table in descending or ascending order by clicking on the column header. To reverse the order click the header again.
- Click **Export** to export the table to a Comma Separated Value (.csv) file that can be opened in Microsoft Excel and saved to your local desktop.

10. When the tabulation is displayed in Line/Column/Stacked Column Chart format:



The colors by which each data attribute value is represented are consistent with the colors by which they are represented on the map when using the Map tab. (For example, with regard to Crash Severity, a Fatal Injury is always color-coded in red).

- You can move the mouse pointer over the image to obtain specific information about each data point plotted in the chart.
- When the mouse pointer touches a data point, it will display a pop-up window that displays the data point information:
  - Attribute category
  - Data attribute on X-axis value
  - Data attribute on Y-axis value
  - Total and percentage (for Stacked Column Charts only)



11. Click **Export** to export the selected chart to a JPEG (.jpg) image file and save it to your local desktop.

If desired, the tabulation display format can be changed (from table to chart) on-the-fly. However, if the tabulation parameters are modified, you must click **Tabulate**.

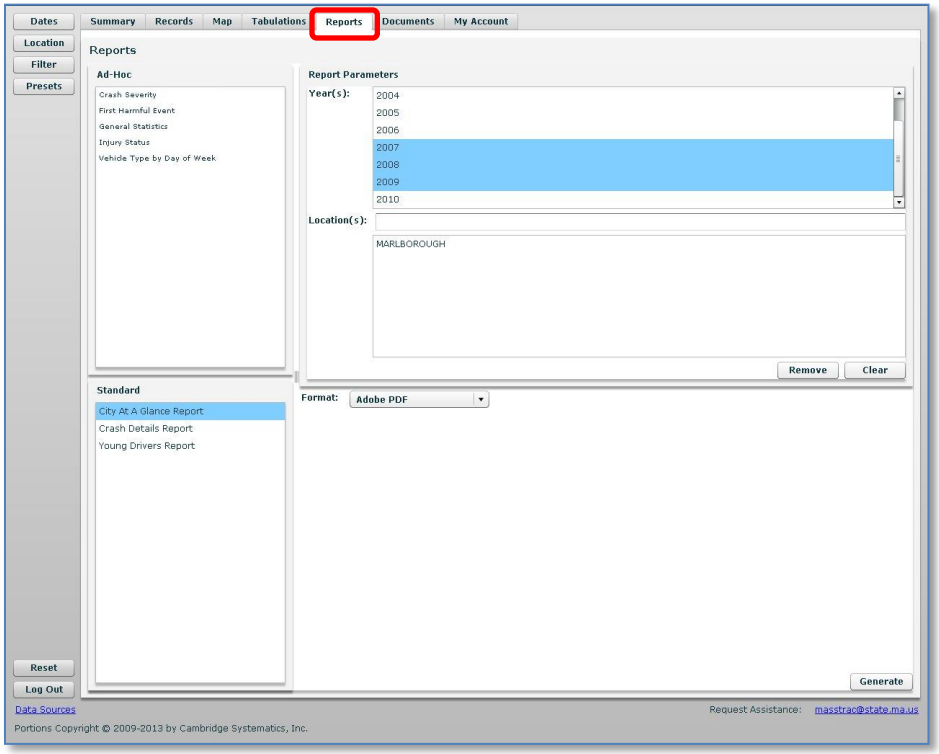
Reports Page

The Reports Page allows you to generate:

- A number of Standard Reports for given datasets, years and locations.
- Ad-Hoc Reports using data generated by the current data query.

To View Reports

1. Click on the **Reports** tab to display the Report Page:



2. On the left side of the Reports Page there are two report categories: **Ad-Hoc** and **Standard**.

Standard Reports

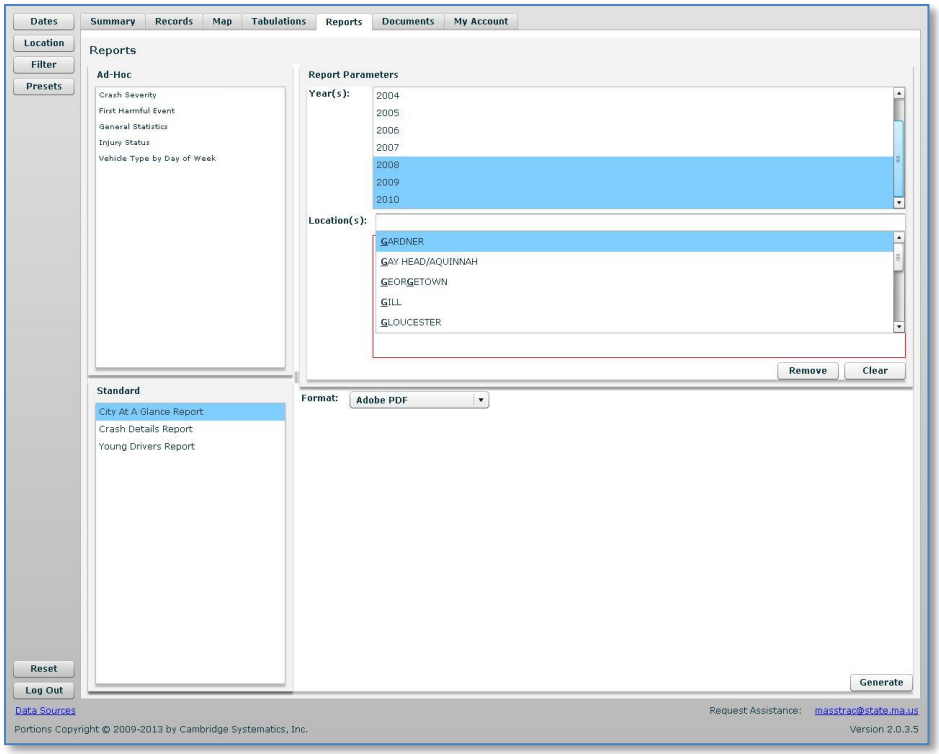
The Standard Reports are designed to be printed directly and are highly formatted, containing Maps, Charts and Tables. The parameters for the Standard Reports depend on the report you select, but normally include one or more years, and one or more locations.

The Standard Reports can be generated in Adobe PDF and Rich Text Format (.rtf):

- Use Adobe PDF if the report is to be directly printed.
- Use .rtf if the report is to be edited before printing.

To generate a Standard Report:

1. In the **Standard** panel, select the title of the Standard Report from the available options.
2. Select the required **Report Parameters** on the right-side panel. For example, for the "City at a Glance Report" you must select three consecutive years and one or more cities/towns:



3. Select the **Format** using the drop-down box and clicking on:
   - Adobe PDF, or
   - Rich Text Format (.rtf).
4. Click **Generate** to produce the report.

Ad-Hoc Reports

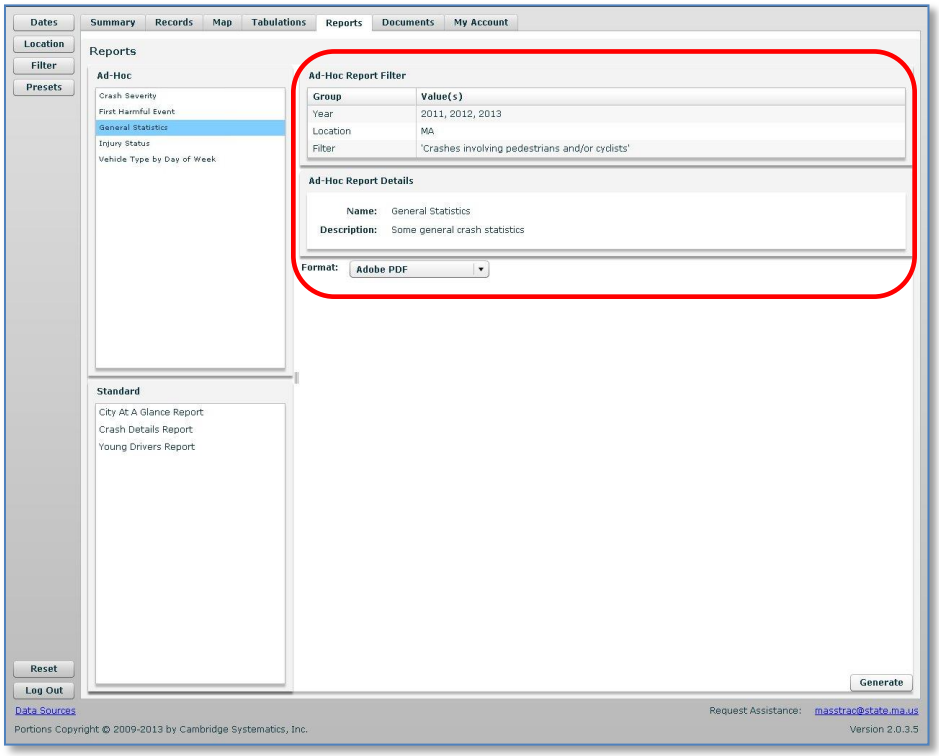
The Ad-Hoc Reports are designed to generate Maps, Tables and Charts that will be inserted into other documents (e.g., Microsoft Word). The data included in the report is based on the current Query.

The Reports can be generated in Adobe PDF, Rich Text Format (.rtf) and HTML (web archive) formats:

- Use Adobe PDF if the report is to be directly printed.
- Use .rtf if the report is to be edited before printing.
- Use HTML (web archive) if generating wide tables.

To generate an Ad-Hoc Report:

1. In the **Ad-Hoc** panel of the Reports Page, select the title of the Ad-Hoc Report from the available options.
2. The right-side panel will show the current query and the description of the Ad-Hoc Report:

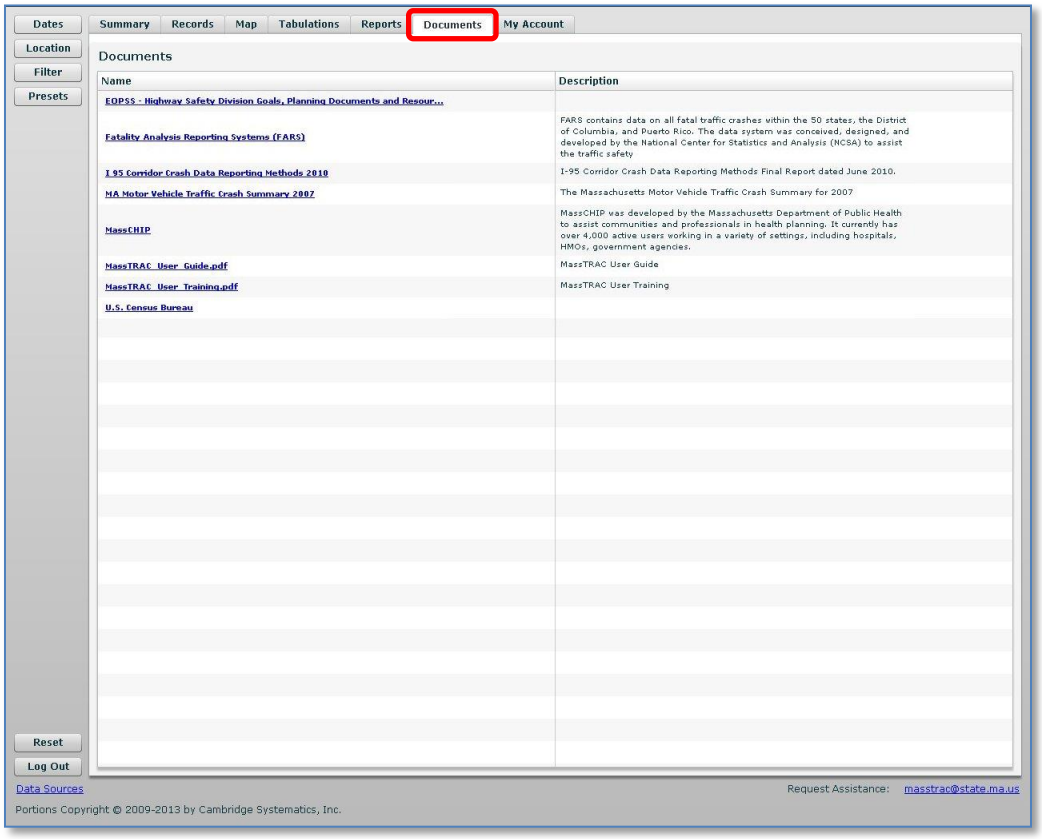


3. Select the output **Format** using the drop-down box and clicking on:
   - Adobe PDF,
   - Rich Text Format (.rtf), or
   - HTML (web archive).
4. Click **Generate** to produce the report.
5. The report will be generated, and then compressed into a Zip (.zip) file. You will be prompted to download this Zip file.

Documents Page

The Documents Page provides access to various electronic documents, including help guides, and links to external data sources that provide information that is relevant to users of MassTRAC.

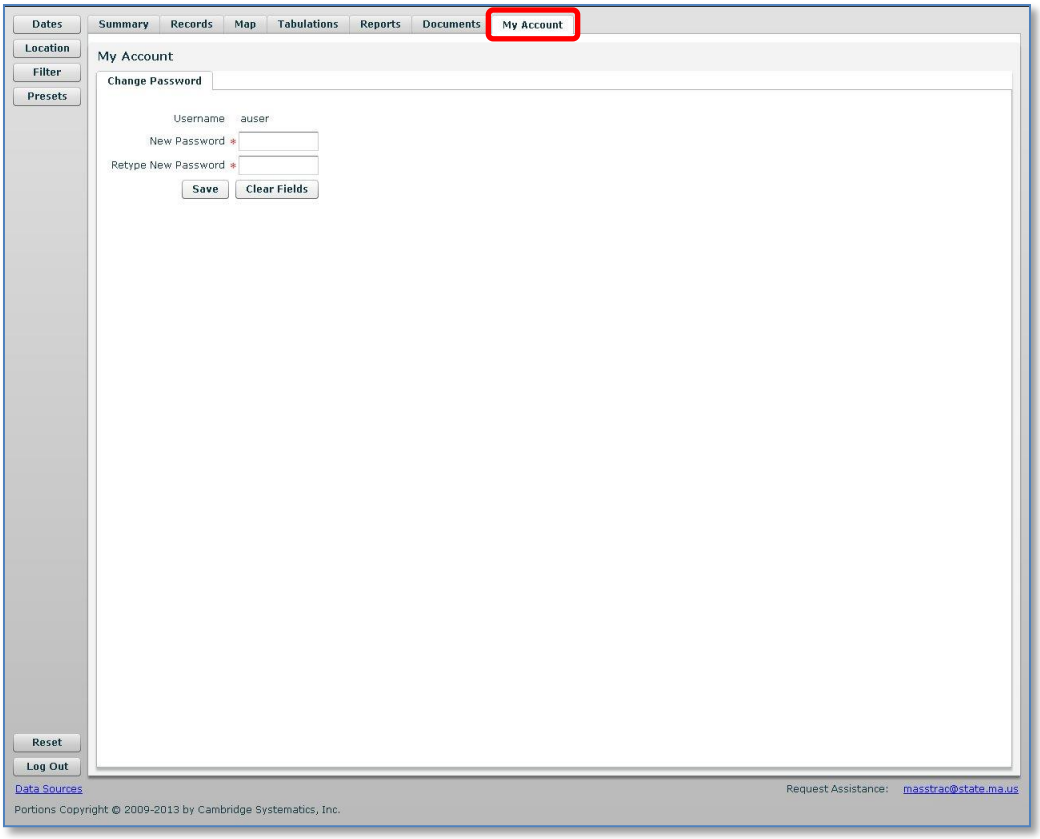
1. Click on the **Documents** tab to display the Documents Page that displays the list of documents and external links maintained within MassTRAC within a table:



2. Click on the appropriate blue/underlined hyperlink in the **Name** column of the table to access the website or document hyperlinks.
   - If a website hyperlink is clicked, a new Internet browser window will be opened, and the website displayed
   - If a document hyperlink is clicked, the document will be downloaded and opened locally in an Internet browser window
3. When finished, you could either close the browser window and continue working with MassTRAC; or leave the window open, in the background, while using MassTRAC.

My Account Page

You can change the password associated with your user account via the My Account Page:



To change your password:

1. Click on the **My Account** tab to display the My Account Page.
2. In the **New Password** text box, enter the new password for your account:

3. In the **Retype Password** text box, reenter the password you entered in the previous text box.
4. If you make a mistake when entering the password, or you want to enter a different password, click Clear Fields to clear any text that was entered.
5. Click Save to confirm the desired password change.

If you forget your password, email the MassTRAC support team at masstrac@state.ma.us who will be able to reset it for you.

QUERIES

You can run a data query within MassTRAC with specific parameters that will determine the output/results displayed in the system. You can select the following parameters:

- The dates(s) in which the data occurred;
- The geographic location(s) of interest; and
- A pre-defined, or customized, data filter.

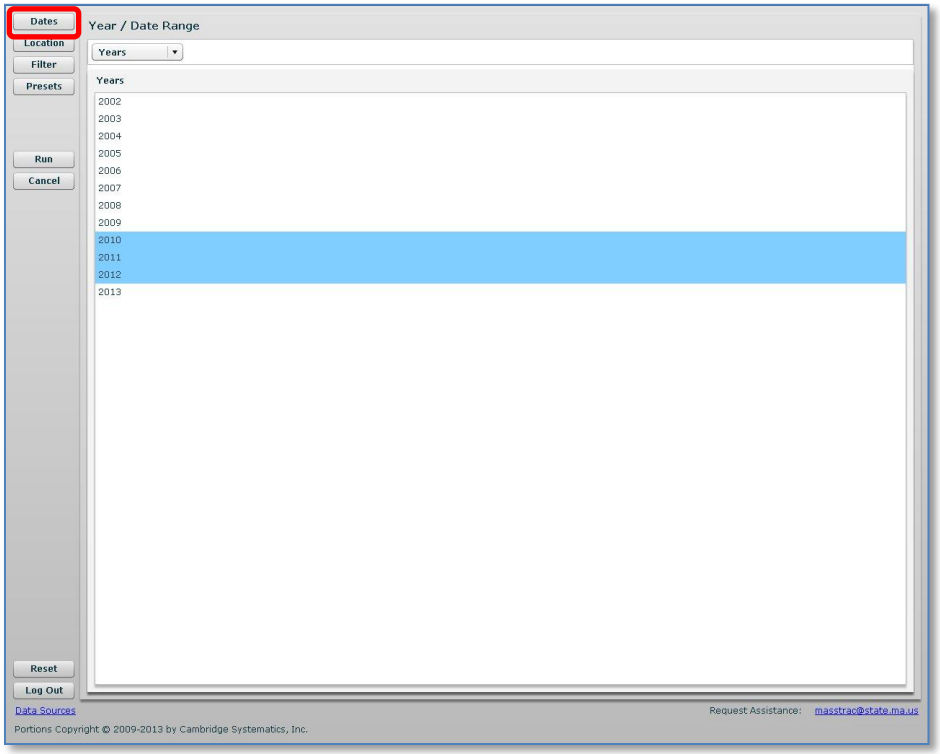
At any time during the query definition process, you may click Cancel *to revert any changes and return to the last Page viewed; or you may click* Reset *to reset the application to display the default query.*

Set the Dates

The date range for the query can be defined either using whole years, or via more detailed date ranges.

Years

1. Click Dates found in the top left corner of the screen.
2. Select Years from the dropdown menu to display the **Years** page.

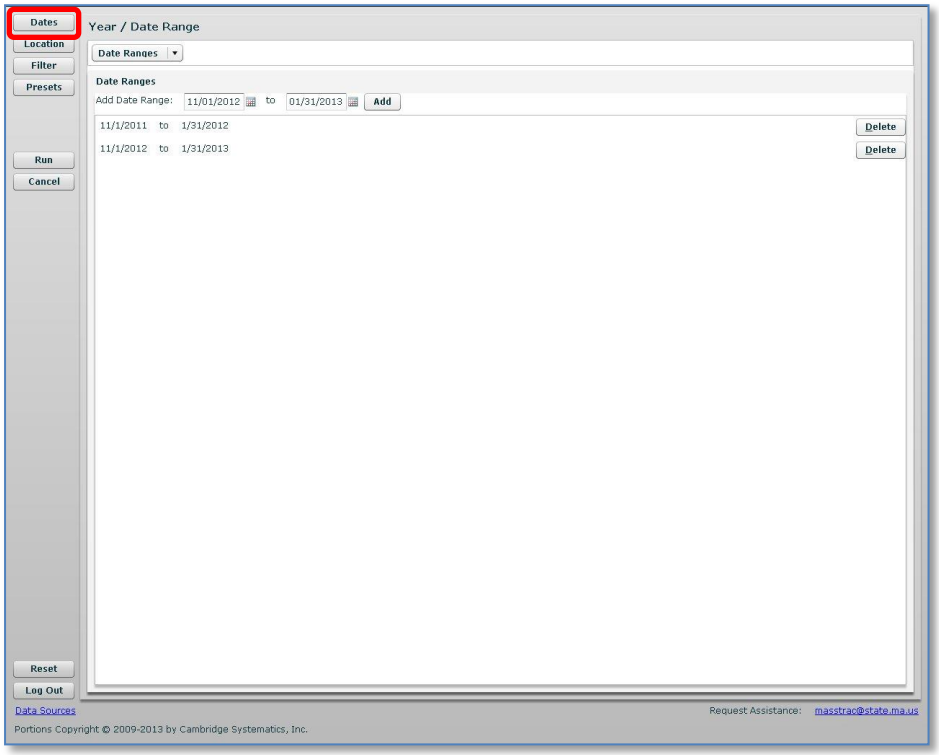


3. Select the year(s) for which you would like to retrieve data. To select multiple years, hold down the **Ctrl** key on your keyboard while clicking on each of the desired years. To select multiple sequential years, hold down the **Shift** key on the keyboard while clicking on each of the desired years:

At least one year must be selected.

Date Range

1. Click **Dates** found in the top left corner of the screen.
2. Select Date Ranges from the dropdown menu to display the **Date Ranges** page.

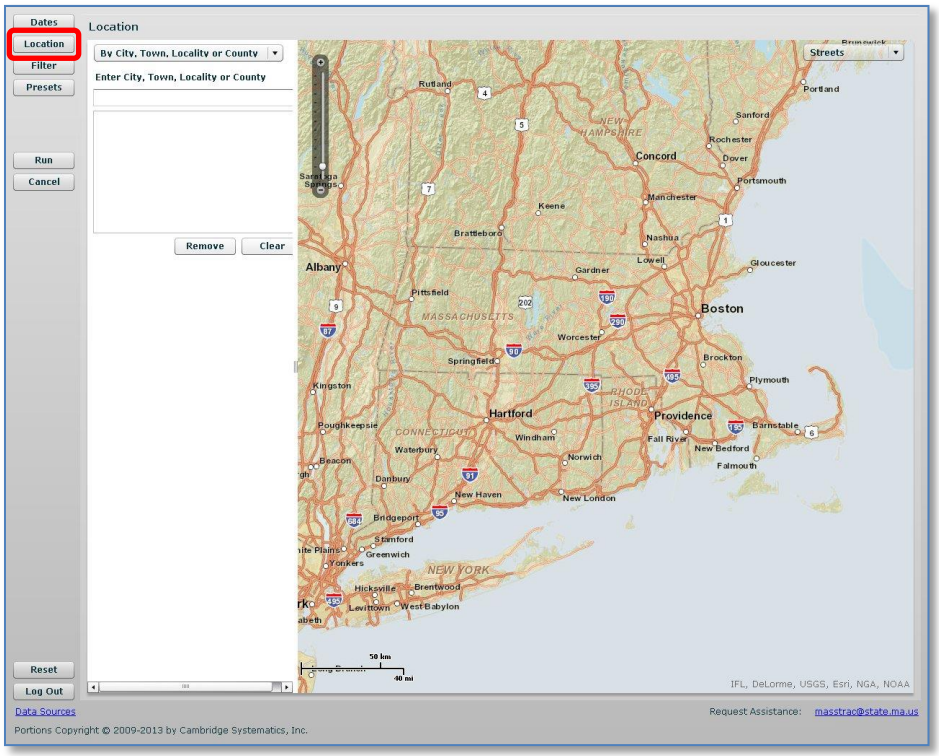


3. Enter the start and end dates for the date range by either typing in the dates in the format mm/dd/yyyy, or click to define the date using the Calendar control. Once the date range is defined, click **Add**.
4. To remove a date range, click **Delete** for the appropriate range.

At least one date range must be defined.

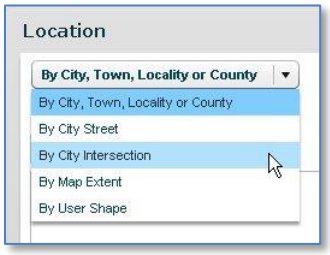
Set the Geographic Extent

1. Click **Location** to display the **Location** Page:



2. The geographic extent of a filter can be defined by:
   - Selecting one or more cities, towns, counties or neighborhoods (i.e., localities) by name;
   - Selecting one or more streets within a city or town by name;
   - Selecting one or more intersections within a city or town by name;
   - Using the extent of the map; or
   - Drawing a circle or polygon on the map.

   Select the appropriate location definition method from the drop-down box at the top of the Page:

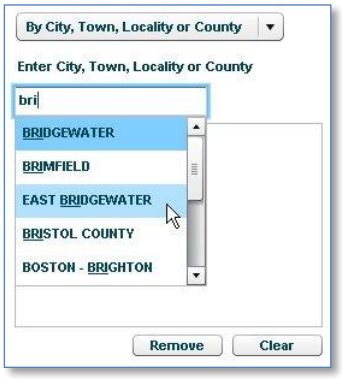


   Based on the selected options, the controls displayed below the drop-down box are updated.

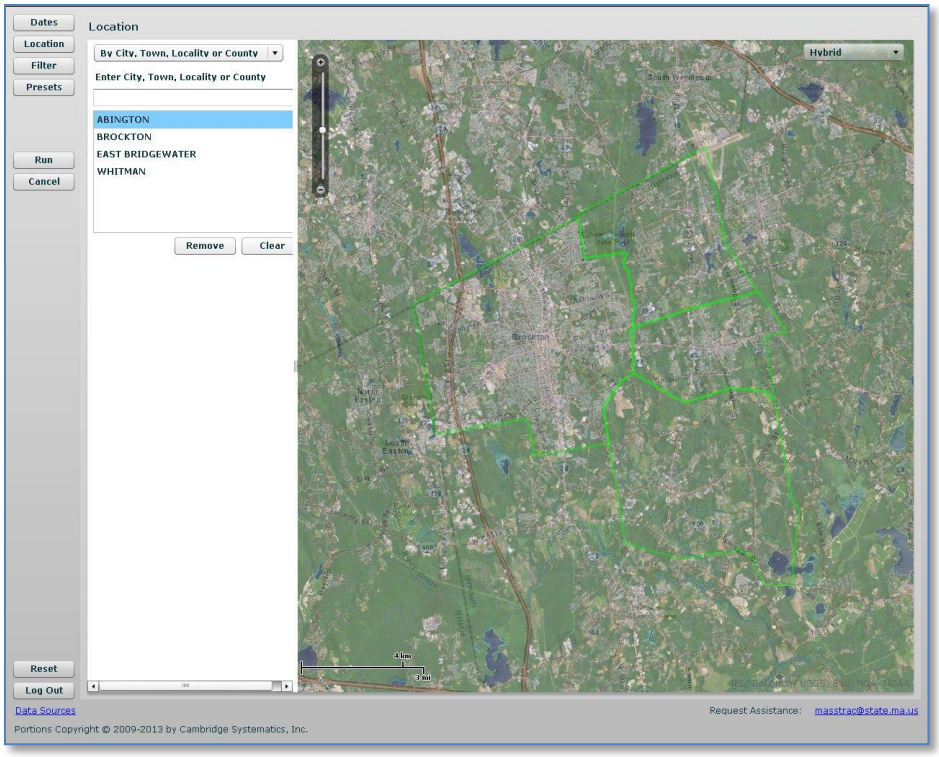
By City, Town, Locality or County

1. In the **Enter City, Town, Locality or County** text box, enter the name of a city/town, neighborhood or county in Massachusetts for which you would like to retrieve data. As you are entering the name

of the city/town, neighborhood or county, the system's "Smart Search" feature will provide a list of potential matches:



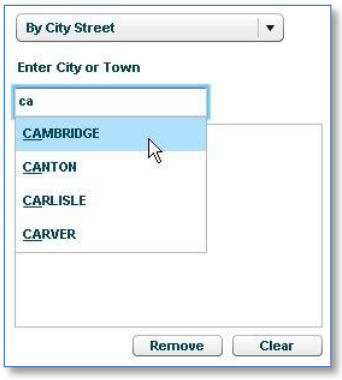
2. Click on the name in the list that matches the location you require. The map will zoom to the extent of the selected location.
3. If you wish to enter multiple locations, repeat for each required location:



If you wish to remove a location from the list, click **Remove**. *If you wish to clear the entire list of locations, click* **Clear**.

By City Street

1. In the **Enter City or Town** text box, enter the name of the city/town, neighborhood or county in Massachusetts that contains the street of interest. As you are entering the name of the city/town, neighborhood or county, the system's "Smart Search" feature will provide a list of potential matches:



2. Click on the name in the list that matches the location you require. The map on the right side of the Page will zoom-in to the selected location. If you wish to reset the selected city/town, click Clear.
3. In the **Enter Street** text box, enter the name of a street in the selected city/town. As you are entering the name of the street, the system's "Smart Search" feature will provide a list of potential matches:

4. Click on the name in the list that matches the street you require.
5. Repeat for each required street.

If you wish to remove a street from the list, click Remove. If you wish to clear the entire list of streets, click Clear.

By City Intersection

1. In the **Enter City or Town** text box, enter the name of the city/town, neighborhood or county in Massachusetts that contains the street of interest. As you are entering the name of the city/town, neighborhood or county, the system's "Smart Search" feature will provide a list of potential matches:

2. Click on the name in the list that matches the location you require. If you wish to reset the selected city/town, click Clear.
3. In the **Enter Intersection** text box, enter the name of a street in the selected city/town. As you are entering the name of the street, the systems "Smart Search" feature will provide a list of potential matches:

4. Click on the name in the list that matches the street you require.
5. Repeat for each required street.

If you wish to remove an intersection from the list, click Remove*. If you wish to clear the entire list of intersections, click* Clear*.*

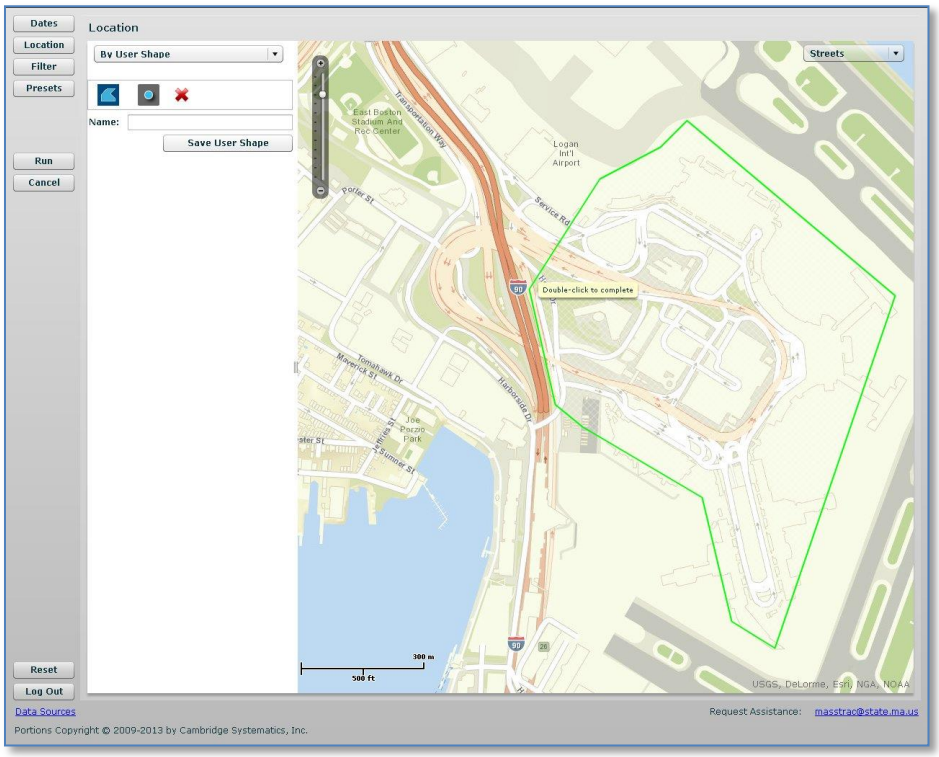
Using the Map Extent

1. Use the zoom in/out and pan functionality to set the required extent of the map.
2. The map extent will be highlighted and used in the query.

Location by User Shape

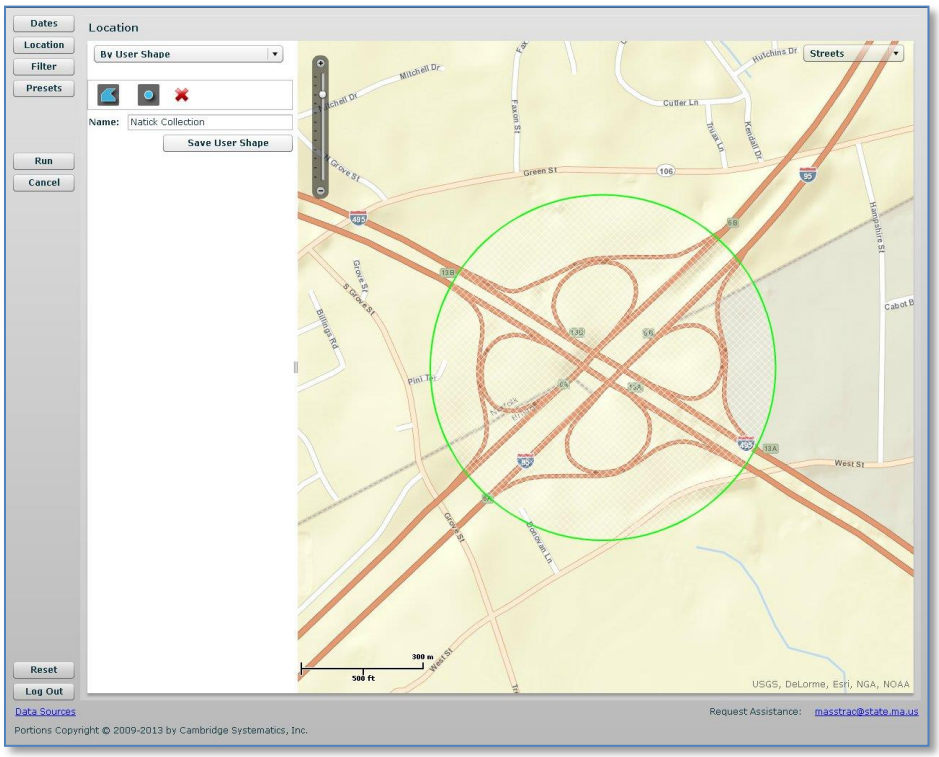
The functionality is only available if the map scale is less than 1:10,000.

1. To geographically constrain the returned Crashes to a user defined polygon or circle, use the map navigation tools to zoom/pan the map to display the required extent.
   - Click the **Polygon** tool button, and then click on the map to locate each vertex of the polygon. Double click the final vertex to complete the polygon:



As the Crashes are located on the roads, draw the polygon so it outlines the required roads.

- Click the **Circle** tool button, and on the map click the centre of the circle and drag to define the radius of the circle:



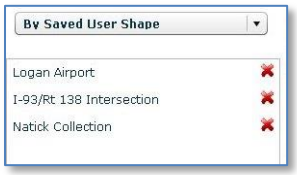
2. To clear the user polygon or circle, click the **Delete Graphic** button.

To save the User Shape for future use, enter a Name and click **Save User Shape**.

Location by Saved User Shape

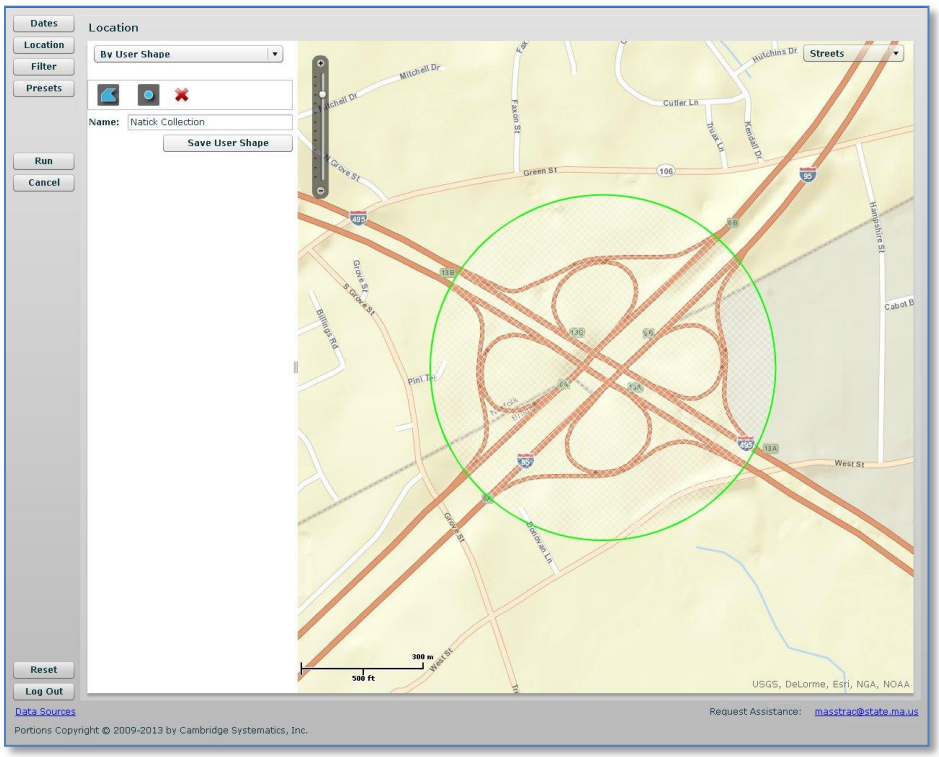
Any saved User Shape can be used to define the filter location.

1. Select the required saved User Shape from the list.



2. To clear the user polygon or circle, click the **Delete Graphic** button.

- Click the **Circle** tool button, and on the map click the centre of the circle and drag to define the radius of the circle:



3. To clear the user polygon or circle, click the **Delete Graphic** button.

To Select a Filter

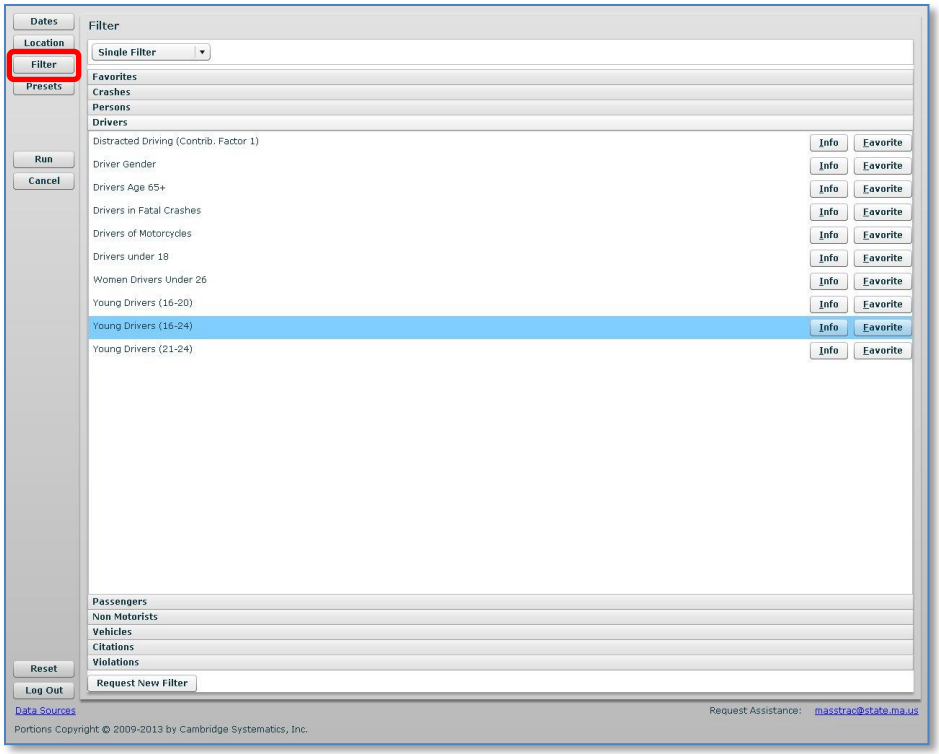
MassTRAC contains many predefined filters that query the database on various data attributes. The filters are grouped in the following categories:

- Crashes
- Persons
- Drivers
- Passengers
- Non Motorists
- Vehicles
- Citations
- Violations

The filters within these groups can be used individually or combined to form more complex filters.

To Select a Basic Filter

1. Click **Filter** to display the **Filter** Page.
2. Select **Single Filter** from the dropdown.
3. Click on the desired category title to expand the list of predefined filters from which to choose:



4. To find out more details about a filter, click **Info** directly to the right of the filter's Name. A **Filter Info** pop-up box will appear:

   This pop-up box provides a detailed description of the filter's parameters, including:

   - Field Category (e.g., Crashes, Vehicles, Drivers)
   - Field Name/Attribute (e.g., Type, Age)
   - Logical Operator (e.g., "in", "<", ">=")
   - Values (Names, numeric)

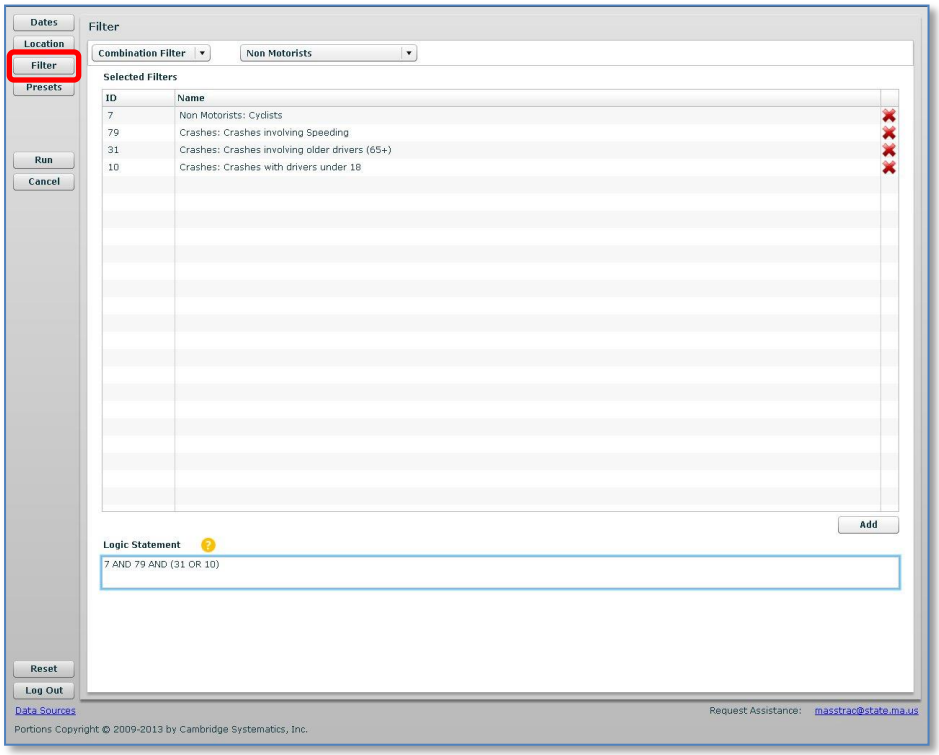
   Click **OK** to close the pop-up box.

5. Select the desired filter(s) to use to retrieve data. To select multiple filters within the same category, hold down the **Ctrl** key on your keyboard while clicking on each of the desired filter names. The filters will be logically AND'ed together (i.e., the dataset must match all selected filters):

> *If you do not find a predefined filter that queries the data you require, you can request new filters to be added to MassTRAC. Refer to the "To Request a New Filter" section of this User Guide.*

To Define a Combination Filter

1. Click Filter to display the **Filter** Page.
2. Select **Combination Filter** from the dropdown.
3. Select the filter category from the **Filter Category** dropdown.
4. Select the first filter and click Add.
5. To add additional filter, click Add, select the required filter and click Add.
6. Repeat step 5 until all of the required filters have been added.



7. In the **Logic Statement** text box, type the logic statement using AND's and OR's defining how the selected filters should be combined.

To view example combination logic statements, click .

Favorite Filters

Filters that you use on a regular basis can be tagged as Favorites. This causes the filter to be displayed in the Favorites category as well as the default category.

To tag a Filter as a Favorite

1. Open the Filter category containing the filter.
2. Click Favorite on the same line as the filter name.
3. The filter will appear under the Favorites category.

To remove a Filter from Favorites

1. Open the Favorites Filter category.
2. Click **Remove** on the same line as the filter name.
3. The filter will no longer appear under Favorites category.

Removing a Filter from the Favorites category does not delete the Filter. It will still appear under the Filter's default category.

Preset Queries

Any defined Query, including the date(s), geographic location(s) and filter, can be saved as a preset that can be re-run.

To Save a Preset

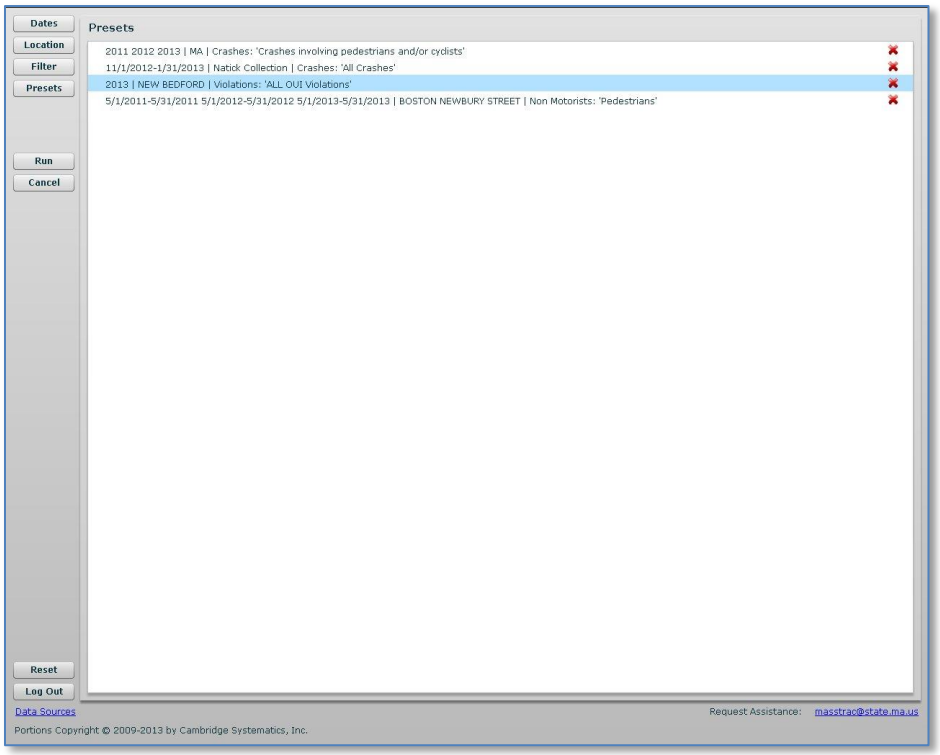
To save the current Query as a preset:

1. Click **Save as Preset** in the top right corner of the Summary, Records, Map or Tabulations pages.

To Use a Preset

To open an existing preset Query:

1. Click **Preset** to display the **Preset** Page.



2. Select the required Preset.

To remove a Preset, click the ✖ button to the right of the Preset.

To Execute a Query

Once all of the parameters of the required Query have been defined, it can be executed.

To execute the query:

1. Click Run. The Query is executed, the database will be queried and the Pages populated with the returned datasets.

> *At any time during the query definition process, you may click Cancel to revert any changes and return to the last Page viewed; or you may click Reset to reset the application to display the default query.*

Save a Query as Default

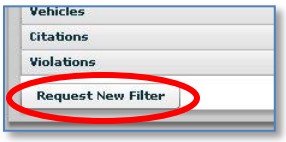
Any defined Query can be defined as the default Query that is executed when you log into MassTRAC. This includes the date(s), geographic location(s) and filter.

1. Click Save as Default in the top right corner of the Summary, Records, Map or Tabulations pages.

Requesting a New Filter

While MassTRAC contains a large number of filters, they may not meet all requirements. Hence, it is possible to request that new filters are defined and added to MassTRAC.

1. On the **Filter** Page, click Request New Filter at the bottom of the Page:



2. An email stub is created in your email program to masstrac@state.ma.us
3. Each valid Filter requires a:
   - Category (e.g., Crashes, Drivers, Passengers, Citations)
   - Name
   - Query attribute field
   - Logic statement defining the query

   Describe the requested filter (Category, Name, Query attribute field and Logic statement) and send the e-mail.

CRASH DATA DICTIONARY

The alcohol-related data within MassTRAC was supplied by the Massachusetts Registry of Motor Vehicles (RMV).

The Crash records are broken down into Crashes, Vehicles and Persons (Drivers, Passengers and Non-Motorists) datasets. The following tables describe the attributes contained within each of these datasets.

Crashes

Attribute	Description
RMV Id	The unique RMV-assigned identifier to the Crash.
Year	The year in which the Crash occurred.
Date	The date on which the Crash occurred, in YYYY/MM/DD format.
Time	The crash time in 24-hour format (military format).
City/Town	The Massachusetts city/town in which the crash occurred.
Locality	The Massachusetts locality (i.e., neighborhood) within a city/town in which the Crash occurred.
County	The Massachusetts county in which the Crash occurred.
Severity	The severity of the Crash based on the most severe injury to any person. (e.g., “Fatal injury,” “Non fatal injury”)
Number of Vehicles	The count of motor vehicle(s) (e.g., automobile, single-unit trucks, truck combinations that are in motion or on a roadway) involved in the crash
First Harmful Event	The injury or damage producing event which characterizes the Crash type and identifies the nature of the first harmful event. (e.g., “Collision with motor vehicle,” “Collision with guardrail”)
First Harmful Event Location	The location of the first harmful event as it relates to the Crash position within or outside the Crash.
Manner of Collision	The manner in which two vehicles in transport initially came together without regard to the direction of force. (e.g., “Single vehicle crash,” “Rear-end,” “Head-on”)
Weather Condition 1	The weather condition (e.g., “Cloudy,” “Rain,” “Snow”) at the time of the Crash.
Weather Condition 2	This data attribute is captured only if there is more than one weather condition type needed to be captured. (e.g., Weather Condition 1 = “Cloudy”; Weather Condition 2 = “Rain”).
Police Agency Type	The type of police agency who reported the Crash.
Road Surface Condition	The apparent condition of the road. (e.g., “Wet,” “Dry,” “Snow”)
Roadway Junction Type	A code which uniquely identifies a roadway junction type. A junction is either an intersection or the connection between a driveway access and a roadway other than a driveway access. (e.g., “T-intersection,” “Four-way intersection”)
Trafficway Description	Indicates whether or not a trafficway is divided and whether it serves one-way or two-way traffic. (e.g., “One-way, not divided,” “Two-way, divided”)
Traffic Control Device Type	The type of traffic control device (TCD) applicable to vehicle at crash location. (e.g., “Traffic control signal,” “Stop signs”)
Traffic Control Device Functionality	Indicates whether the traffic control was functioning at the time of Crash.
Hit/Run Related	Indicates whether or not the crash involves a hit and run vehicle.
Ambient Light	The type of light that exists at the time of the crash. (e.g., Dawn, Daylight, Dark – lighted road)
School Bus Related	Indicates whether a school bus is related to the Crash. The school bus must be directly involved as a contact vehicle or indirectly involved as a non contact vehicle.

Status	That status of the Crash. (e.g., “Open/Incomplete,” “Closed”)
Latitude	The Global Positioning System location information which identifies the degrees, minutes, and seconds of latitude.
Longitude	The Global Positioning System location information which identifies the degrees, minutes, and seconds of longitude.

Vehicles

Attribute	Description
Id	The system-assigned number which uniquely identifies the Vehicle involved in the Crash.
Crash RMV Id	The system-assigned number which uniquely identifies the Crash.
Configuration	The configuration of the Vehicle. (e.g., “Passenger car,” “Light truck”)
Emergency Use	A code, “yes” or “no”, which indicates Vehicles, such as military, police, ambulance, fire, etc., which are on an emergency response. Emergency refers to a Vehicle that is traveling with physical emergency signals in use-typically red light blinking, siren sounding, etc.
Type	A code which identifies the general configuration or shape of a Vehicle distinguished by characteristics such as number of doors, seats, roof line, hard top or convertible.
Make	The distinctive name applied to the Vehicle by the manufacturer. (e.g., “HONDA,” “FORD”)
Model	The manufacturer assigned name denoting a family of Vehicles (within a make) which has a degree of similarity in construction, such as body, chassis, etc. (e.g., “CIVIC,” “TAURUS”)
Model Year	The year which is assigned to a Vehicle by the manufacturer.
State	The state or province for registration of the Vehicle (e.g., “Massachusetts,” “Connecticut”)

Persons

Attribute	Description
Id	The system-assigned number which uniquely identifies the Person (Driver, Passenger, Non-Motorist) involved in the Crash.
Crash RMV Id	The system-assigned number which uniquely identifies the Crash.
Vehicle Id	The system-assigned number which uniquely identifies the vehicle involved in the Crash.
Type	The type of person involved in the Crash. (e.g., “Driver,” “Passenger,” “Non motorist”)
Age	The age of the Person involved in the Crash.
Gender	The gender of the Person involved in the Crash.
Injury Status	A code which identifies the injury severity level for a Person involved in the Crash. (e.g., “Fatal injury,” “Non fatal injury,” “No injury”)

Drivers

Attribute	Description
Id	The system-assigned number which uniquely identifies the Driver involved in the Crash.
Crash RMV Id	The system-assigned number which uniquely identifies the Crash.
Vehicle Id	The system-assigned number which uniquely identifies the Vehicle involved in the Crash.
Age	The age of the Driver involved in the Crash.
Gender	The gender of the Driver involved in the Crash.

Injury Status	A code which identifies the injury severity level for a Driver involved in the Crash. (e.g., “Fatal injury,” “Non fatal injury,” “No injury”)
Driver License State	The state or province for the Driver (e.g., “Massachusetts,” “Connecticut”)
Cited	Indicates whether Driver received a motor Vehicle Citation as a result of the Crash.
Citation Number	The unique number of the traffic Violation ticket that the Driver received as a result of the Crash.
Driver Contributing Circumstances 1	A code which identifies the contributing circumstance at Driver level. (e.g., “No improper driving,” “Exceeded authorized speed limit,” “Disregarded traffic signs, signals, road markings”)
Driver Contributing Circumstances 2	A code which identifies the contributing circumstance at Driver level. (e.g., “No improper driving,” “Exceeded authorized speed limit,” “Disregarded traffic signs, signals, road markings”)
Driver Condition	A code which identifies the condition of the Driver which may have contributed to the Crash. (e.g., “Apparently normal,” “Physical impairment,” “Under the influence of medications/drugs/alcohol”)
Seating Position	A code which indicates the location for this Driver in, on, or outside of the motor Vehicle prior to the impact of a crash. (e.g., “Front seat – left side (or motorcycle driver),” “Front seat – right side”)
Occupant Protective System Use	Indicates the restraint equipment in use by the Driver at the time of the Crash, or the helmet use by a motorcyclist. (e.g., “Shoulder and lap belt used,” “None used – vehicle occupant”)
Air Bag Deployed	Indicates the deployment status of an air bag relative to the position of the Driver.
Air Bag Status	Indicates the switch status of an air bag relative to position of the Driver.
Ejection	Indicates whether the Driver was ejected from the Vehicle.
Trapped	Indicates if Driver was mechanically restrained in the Vehicle by damaged Vehicle components as a result of a Crash, and are freed from the Vehicle.

Passengers

Attribute	Description
Id	The system-assigned number which uniquely identifies the Passenger involved in the Crash.
Crash RMV Id	The system-assigned number which uniquely identifies the Crash.
Vehicle Id	The system-assigned number which uniquely identifies the Vehicle involved in the Crash.
Age	The age of the Passenger involved in the Crash.
Gender	The gender of the Passenger involved in the Crash.
Injury Status	A code which identifies the injury severity level for the Passenger involved in the Crash. (e.g., “Fatal injury,” “Non fatal injury,” “No injury”)
Seating Position	A code which indicates the location for this Passenger in, on, or outside of the motor vehicle prior to the impact of a Crash. (e.g., “Front seat – left side (or motorcycle driver),” “Front seat – right side”)
Occupant Protective System Use	Indicates the restraint equipment in use by the Passenger at the time of the Crash, or the helmet use by a motorcyclist. (e.g., “Shoulder and lap belt used,” “None used – vehicle occupant”)
Air Bag Deployed	Indicates the deployment status of an air bag relative to the position of the Passenger.
Air Bag Status	Indicates the switch status of an air bag relative to position of the Passenger.
Ejection	Indicates whether the Passenger was ejected from the vehicle.
Trapped	Indicates the Passenger was mechanically restrained in the Vehicle by damaged vehicle components as a result of a Crash, and are freed from the Vehicle.

Non-Motorists

Attribute	Description
Id	The system-assigned number which uniquely identifies the Non-Motorist involved in the Crash.
Crash RMV Id	The system-assigned number which uniquely identifies the Crash.
Age	The age of the Non-Motorist involved in the Crash.
Gender	The gender of the Non-Motorist involved in the Crash.
Injury Status	A code which identifies the injury severity level for the Non-Motorist involved in the Crash. (e.g., “Fatal injury,” “Non fatal injury,” “No injury”)
Non Motorist Type	Code which identifies the type of Non-Motorist involved in a crash. (e.g., “Pedestrian,” “Pedalcyclist”)
Non Motorist Location	Code which identifies the Non-Motorist’s location with respect to the roadway prior to impact.
Non Motorist Activity	The action of the Non-Motorist prior to the Crash.
Non Motorist Condition	Code which identifies the condition of the Non-Motorist immediately prior to a Crash.

ROADWAY CHARACTERISTICS

The roadway characteristics data within MassTRAC was downloaded[1] from the Massachusetts Department of Transportation (MassDOT).

Segments

The Segments dataset represents linear assets maintained by MassDOT, other state agencies or municipalities.

Attribute	Description
Crash RMV Id	The system-assigned number which uniquely identifies the Crash.
Road Inventory ID	Unique identifier of the Road Inventory file.
CRN	Unique identifier combining County Code and Road Inventory ID.
Road Segment ID	Unique identifier of the base arcs/segments.
From Measure	Measured length along the specified Road Segment where the Road Inventory segment begins.
To Measure	Measured length along the specified Road Segment where the Road Inventory segment ends.
Assigned Length	Segment length in miles.
Assigned Length Source	Source of the assigned length value: 0 = GIS 1 = Odometer 2 = Prorated odometer
StreetList ID	Identifier of the Street the segment lies on.
Street Name	Name of the street.
City	City ID: 1= Abingdon & 351 = Yarmouth
County	County Code: A = Barnstable B = Berkshire C = Bristol D = Dukes E = Essex F = Franklin G = Hampden H = Hampshire I = Middlesex J = Nantucket K = Norfolk L = Plymouth M = Suffolk N = Worcester
Municipal Status	1 = City 2 = Town

[1] http://www.massdot.state.ma.us/planning/Main/MapsDataandReports/Data/GISData/RoadInventory.aspx

	3 = Town with City Government
From End Type	Defines the start of the street the segment lies on: 1 = Cross-street 2 = Dead end 3 = Cul-de-sac 4 = Private property 5 = Town line 6 = State line
From Street Name	cross-street where the street starts (when the street starts at a cross-street).
From City	City where the street starts when the street starts at a city boundary: 1= Abington & 351 = Yarmouth
From State	State where the street starts when the street starts at a state boundary: 1 = Connecticut 2 = New Hampshire 3 = New York 4 = Rhode Island 5 = Vermont
To End Type	Defines the end of the street the segment lies on (see 'From End Type' for values).
To Street Name	Cross-street where the street ends (when the street ends at a cross-street).
To City	City where the street ends when the street ends at a city boundary: 1= Abington & 351 = Yarmouth
To State	State where the street ends when the street ends at a state boundary (see 'From State' for values).
Mileage Counted	Describes whether the segments length is counted towards the official statewide road centerline mileage 1 = Yes 0 = No
Route Key	Primary state numbered route or designated non-numbered route on which this segment lies; when more than one route traverse a segment, the *highest order* (Interstate > US Highway > State Route), *lowest number* route is primary; non-numbered routes are used internally by Planning for pavement data collections.
Route From	Measured length along the specified *Route* where this Road Inventory segment starts.
Route To	Measured length along the specified *Route* where this Road Inventory segment ends.
Route System	I = Interstate US = US Highway SR = State Route 0 = Not a numbered route
Route Number	Official route number designation; need not be exclusively numeric (*146A*, for example).
Sub Route	Optional designation to distinguish alternate sections of the same numbered route.
Route Direction	NB = North EB = East SB = South WB = West
Route Type	0 = Non-numbered 1 = Numbered-Primary (NB/EB) 2 = Numbered-Opposing (SB/WB)
Route Qualifier	0 = No Qualifier or Not Signed or Not Applicable 1 = Alternate 2 = Business Route 3 = Bypass

	4 = Spur 5 = Loop 6 = Proposed 7 = Temporary 8 = Truck Route 9 = None of the Above
RPA	Regional Planning Agency: BRPC =Berkshire Regional Planning Commission CCC = Cape Cod Commission CMRPC = Central Massachusetts Regional Planning Commission FRCOG = Franklin Regional Council of Governments MAPC = Metropolitan Area Planning Council MRPC = Montachusett Regional Planning Commission MVC = Marthas Vineyard Commission MVPC = Merrimack Valley Planning Commission NMCOG = Northern Middlesex Council of Governments NPEDC = Nantucket Planning and Economic Development Commission OCPC = Old Colony Planning Council PVPC = Pioneer Valley Planning Commission SRPEDD = Southeastern Regional Planning and Economic Development District
MPO	Metropolitan Planning Organization Berkshire Boston Region Cape Cod Central Massachusetts Franklin Martha's Vineyard Merrimack Valley Montachusett Nantucket Northern Middlesex Old Colony Pioneer Valley Southeastern Massachusetts
MassDOT Highway District	MassDOT Highway District (1-6).
Urban Type	1 = Urbanized area – Densely settled territory that contains 50,000 people or more 2 = Urban cluster – Densely settled territory that contains at least 5,000 people but fewer than 50,000 people 5 = Rural
Urbanized Area	0 = RURAL 7 = Boston (MA-NH-RI) 26 = Providence (RI-MA) 43 = Springfield (MA-CT) 76 = Worcester (MA-CT) 127 = New Bedford 189 = Leominster-Fitchburg 199 = Pittsfield 246 = Nashua (NH-MA) 394 = Barnstable Town A = Amherst B = Athol

	C = Great Barrington D = Greenfield E = Lee F = Nantucket G = North Adams (MA-VT) I = Pepperell K = Stafford (CT-MA) L = Vineyard Haven M = Ware O = Winchendon (MA-NH)
Functional Classification	0 = Local 1 = Interstate 2 = Principal Arterial – Other Freeways and Expressways 3 = Principal Arterial - Other 4 = Rural minor arterial 5 = Urban minor arterial or rural major collector 6 = Urban collector or rural minor collector *Note: Use urban/rural designation to interpret functional classification.*
Federal Func Classification	1 = Interstate 2 = Principal arterial 3 = Rural minor arterial 5 = Major Collector 6 = Minor Collector 7 = Local
Jurisdiction	1 = Massachusetts Department of Transportation 2 = City or Town accepted road 3 = Department of Conservation and Recreation 5 = Massachusetts Port Authority 6 = State Park or Forest 7 = State Institutional 8 = Federal Park or Forest 9 = County Institutional 0 = Unaccepted by city or town B = State college or university C = US Air Force D = US Army Corps of Engineers E = Federal Institutional F = Other Federal G = Federal Bureau of Indian Affairs H = Private I = US Army J = US Navy
Truck Route	0 = Not a parkway - not on a designated truck route 1 = Designated truck route under Federal Authority in 23 CFR 658 Available to STAA vehicles (Twin 28' Semi-trailer-trailer and 48' Semi-trailer combinations) 2 = Designated truck route ONLY under State Authority. Fully available to both types of STAA vehicles described above 3 = Department of Conservation and Recreation Parkway – No trucks allowed
NHS Status	National Highway System Status: 0 = Not on NHS 1 = NHS - Interstate

	2 = NHS - Strategic Defense Highway System (STRAHNET) 3 = NHS - STRAHNET Connector 4 = NHS - Other - One-way pair 5 = NHS - Other - Truck route exclusion 6 = NHS - Major Airport 7 = NHS - Major Port Facility 8 = NHS - Major Amtrak Station 9 = NHS - Major Rail/Truck terminal 10 = NHS - Major Intercity Bus Terminal 11 = NHS - Major Public Transit or Multi-Modal Passenger Terminal 12 = NHS - Major Pipeline Terminal 13 = NHS - Major Ferry Terminal 14 = NHS - Other (not in above categories)
Federal Aid Route Number	{Maintained for historical purposes}
Facility Type	1 = Mainline roadway* 2 = Bridge* 3 = Tunnel* 4 = Doubledeck* 5 = Rotary* 6 = Causeway* 7 = Simple ramp 8 = Ramp - NB/EB 9 = Ramp - SB/WB 10 = Collector - Distributor 11 = Simple Ramp - Tunnel 12 = Bicycle * Road types included in official statewide road centerline mileage
Street Operation	1 = One-way traffic 2 = Two-way traffic
Access Control	0 = No control 1 = Full control 2 = Partial control
Toll Road	0 = Not a toll road 1 = A toll road
Number of Peak Hour Lanes	Number of lanes open for vehicles during Peak travel times including breakdown and high-occupancy vehicle lanes.
Right Sidewalk Width	Width of the sidewalk in feet on the right side of the road traveling in the primary (NB/EB) direction of travel.
Right Shoulder Type	Type of shoulder on the right side of the road traveling in the primary (NB/EB) direction of travel: 0 = No Shoulder 1 = Stable - Unruttable compacted subgrade 2 = Unstable shoulder 3 = Hardened bituminous mix or penetration 4 = Combination shoulder
Right Shoulder Width	Width of shoulder in feet on the right side of the road traveling in the primary (NB/EB) direction of travel.
Median Type	Type of median on divided roadways: 0 = None 1 = Curbed

	2 = Positive barrier - Unspecified 3 = Unprotected 4 = Positive barrier – Flexible 5 = Positive barrier – Semi-Rigid 6 = Positive barrier - Rigid
Median Width	Width of median in feet on divided roadways.
Left Sidewalk Width	Width of the sidewalk in feet on the left side of the road traveling in the primary (NB/EB) direction of travel; on divided roadways, this will fall on the opposing direction.
Left Shoulder Type	Type of shoulder on the left side of the road traveling in the primary (NB/EB) direction of travel; for divided roadways median shoulders are assumed to be of the same type: 0 = No Shoulder 1 = Stable - Unruttable compacted subgrade 2 = Unstable shoulder 3 = Hardened bituminous mix or penetration 4 = Combination shoulder
Undivided Left Shoulder Width	Width of shoulder in feet on the opposing side of an undivided road.
Undivided Left Shoulder Type	Type of shoulder on the opposing side of an undivided road 0 = No Shoulder 1 = Stable - Unruttable compacted subgrade 2 = Unstable shoulder 3 = Hardened bituminous mix or penetration 4 = Combination shoulder
Left Shoulder Width	Width of shoulder in feet on the left side of the road traveling in the primary (NB/EB) direction of travel; for divided roadways median shoulders are assumed to be of the same type.
Surface Type	1 = Unimproved, graded earth, or soil surface road: 2 = Gravel or stone road 3 = Brick road 4 = Block road 5 = Surface-treated road 6 = Bituminous concrete road 7 = Portland cement concrete road 8 = Composite road; flexible over rigid 9 = Composite road; rigid over flexible or rigid over rigid ("white topping")
Surface Width	Surface width in feet; measurement of traveled way, excluding shoulders/auxiliary lanes.
Right of Way Width	Right-of-way width in feet.
Number of Travel Lanes	Number of travel lanes (for undivided roadways, number of lanes in both directions of travel, for divided roadways, number of lanes on the given segment only).
Opposite Number of Travel Lanes	Number of travel lanes in the opposite direction of a divided roadway.
Curbs	0 = None 1 = Left side only 2 = Right side only 3 = Both sides 4 = Along median only 5 = All curbs (divided highway)
Terrain	1 = Level 2 = Rolling 3 = Mountainous

Speed Limit	Designated Speed Limit.
Opposing Direction Speed Limit	Designated Speed Limit in opposite direction of travel.
Structural Condition	1 = Good 2 = Fair 3 = Deficient 4 = Intolerable
ADT	Average Annual Daily Traffic.
ADT Station Number	ADT count station location number; used to reference Traffic Data Collections counting.
ADT Derivation	0 = Not applicable 1 = Derived from counts collected on or adjacent to the section during the current year 2 = Derived from factoring counts from the previous year count-base AADT that is less than three years old 3 = Derived from count data that is three or more years old 4 = Derived from an estimate 5 = Working code for principal arterial counting program
ADT Year	Year of ADT collection.
IRI	Pavement Roughness; value reflects calibrated value in inches of roughness per mile.
IRI Year	Year of IRI collection.
IRI Status	1 = IRI data collected 2 = No IRI data collected due to speed 3 = No IRI data collected due to construction 4 = No data collected due to bridge deck
PSI	Pavement Condition; value reflects estimated condition on selected roadway section.
PSI Year	Year of PSI collection
HPMS Code	0 = Not an HPMS section nor on a road that has an HPMS section 1 = Not an HPMS section but is on a road that has an HPMS section 2 = An HPMS section
HPMS Sample ID	HPMS Sample identifier for sections lying on a designated HPMS sample.
Added Road Type	Description of roads added to the GIS that are 250 feet or more and serve a specific land use: 0 = Default/Not applicable 1 = Public road (but not highway ramp) 3 = Highway ramp 4 = Road appears in 1:5000-scale centerline file, but not in DLG or orthophotos 5 = Research park, industrial park, office park, shopping mall or center, condominium complex or subdivision 6 = Airport passenger or cargo area, port access road, intermodal terminal access road, or major truck terminal 7 = Treatment plant, electrical plant, petroleum depot, town or state facility, or other water, sewer, power, or communication facility 8 = State park or other recreational area 9 = Cul-de-sac 10 = Other private road 11 = Rest area
Date Active	Date the road became active, or, if not known, the date it was entered into the system; all roads active when this field was implemented were assigned a date 1/1/2004

Life Cycle Status	1 = Proposed 2 = In Construction 3 = Active
End Year	Year Roadway Characteristics records became invalid.
Start Year	Year Roadway Characteristics records became valid.

CITATIONS DATA DICTIONARY

The Citation and Violation data within MassTRAC was supplied by the Massachusetts Merit Control Board (MRB).

Each Citation contains one or more Violations. The following tables describe the attributes contained within each of these datasets.

Citations

Attribute	Description
Id	The system-assigned number which uniquely identifies the Citation that was issued.
Citation Number	The unique number of the traffic Violation ticket that the Driver received as a result of the Crash.
Date	The date on which the Citation was issued.
Time (hr)	The hour of the day (1-12) during which the offense/violation occurred.
AM/PM	The time of day (AM, PM) in which the offense/violation occurred.
Location	The location (city/town) where offense/violation occurred.
Type	The type of Citation that was issued. (e.g., “Civil,” “Criminal”)
Accident Indicator	Indicates whether an accident occurred.
Violator Gender	The gender of the individual who was issued the Citation.
Violator Race	The race of the individual who was issued the Citation.
Violator Age	The age of the individual who was issued the Citation.
Violator License Class	The license class of the individual who was issued the Citation. (e.g., “D,” “DM”)
Violator License State	The state or province for of the license of individual who was issued the Citation. (e.g., “Massachusetts,” “Connecticut”)
Violator City	The city/town of the address of the individual who was issued the Citation.
Violator Locality	The locality (i.e., neighborhood) within a city/town of the address of the individual who was issued the Citation.
Violator State	The state or province of individual who was issued the Citation. (e.g., “Massachusetts,” “Connecticut”)
Violator Zip	The postal code of the address of the individual who was issued the Citation.
Commercial License Indicator	Indicates whether the license is a commercial driver’s license.
Commercial Vehicle Indicator	Indicates whether the Vehicle required a commercial driver’s license.
Operator/Owner Indicator	Indicates whether the owner or operator of the vehicle was at fault for the Violation. (For example, if the Violation was related to an expired inspection sticker, the Citation would be issued to the owner of the Vehicle.)
Court Name	The name of the district court that has jurisdiction over the location where the Violation occurred.
Police Agency Name	The name of the police agency to which the officer who issued the Citation belonged. (e.g., “Framingham Police Department,” “State Police Troop A-1”)
Non Inventory Vehicle Search	Indicates whether a non inventory search was performed on the Vehicle.
Hazmat Indicator	Indicates whether the Vehicle transported hazardous materials.
Vehicle Make	The name applied to a group of Vehicles by a manufacturer. (e.g., “FORD,” “TOYT”)
Vehicle Type	The manufacturer assigned name denoting a family of Vehicles (within a make) which has a degree of similarity in construction, such as body, chassis, etc. (e.g., “TAURUS,” “CAMRY”)
Vehicle Year	The year which is assigned to a Vehicle by the manufacturer.

Vehicle Registration State	The state or province for registration of the Vehicle (e.g., “Massachusetts,” “Connecticut”)

Violations

Attribute	Description
Id	The system-assigned number which uniquely identifies the Violation.
Citation Number	The unique number of the traffic violation ticket that the driver received as a result of the Crash.
Offense Chp Sec SubSec	Identifies the chapter and section number of the violation code associated with the offense.
Offense Description	The description of the offense/violation. (e.g., “FAILURE TO STOP,” “SPEEDING,” “OPERATOR UNLICENSED”)
Assessment Amount	The estimated dollar amount, in damages, as a result of the Violation.
Speed Limit (mph)	The speed limit of the road on which the Violation occurred.
Violator Speed (mph)	The actual speed at which the violator was traveling at the time the Violation occurred.

ALCOHOL DATA DICTIONARY

The alcohol-rated data within MassTRAC was supplied by the Massachusetts Alcohol Beverage Control Commission (ABCC).

Liquor Licenses

Details of Liquor Licenses issued by the Commonwealth of Massachusetts.

Attribute	Description
Id	The system-assigned uniquely identifier.
City	Name of the city
Name	Name of the Liquor License holder.
Business Name	Doing Business As.
Street Address	Address of the Liquor License holder.
License ID 1	Liquor License ID.
License ID 2	Liquor License ID.
Status	A = Active
Type	Type of the Liquor License: GP = Package store RS = Restaurant
State	State of the Liquor License holder.
Latitude	Latitude of the geocoded address.
Longitude	Longitude of the geocoded address.

Last Drinks

Alcohol-related citations detailing location of Last Drink.

Attribute	Description
Id	Unique identifier.
Case ID	Court Case ID
Docket	Court Docket ID
Name	Name of the establishment at which the last drink was consumed.
Street Address	Address of the establishment at which the last drink was consumed.
City State Zipcode	City/State/Zipcode of the establishment at which the last drink was consumed.
Comments	
Ins Date	Date the Citation was issued.
Offense Date	Date of the offense.
Citation Number	Citation Number.
City	City of the establishment at which the last drink was consumed.
Year	Year of the offense.
Citation ID	Citation ID

ACCESSIBILITY

To provide access to MassTRAC for users with limited fine motor controls, MassTRAC is capable of being controlled through use of the keyboard. The focus can be moved between the controls, including browser-based controls such as the address bar (where URLs are entered). Controls that have the focus can be selected.

Application Navigation

The application is navigated by moving the current focus forwards and backwards though all of the selectable controls (displayed in "Control Interaction" below). The presently focused control is highlighted in blue.

The focus generally flows through the filter buttons on the left, then the tabs within MassTRAC along the top, then into the tables, map/buttons or other content within the tab.

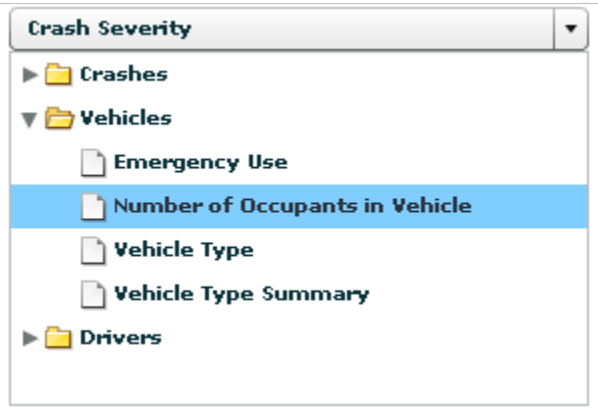
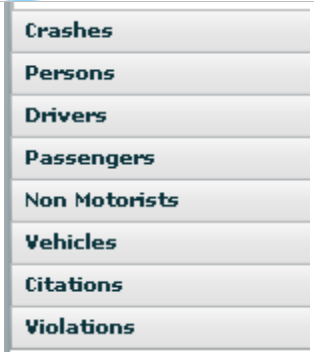
Note: Currently, there are no keyboard shortcuts in MassTRAC.

To move the focus to the next control, press the **Tab** key on the keyboard. To return the focus to the previous control, hold down the **Shift** key and press the **Tab** key on the keyboard (Shift+Tab).

Control Interaction

There are multiple control types used within MassTRAC. The following table describes the means to interact with them.

Note: For users of screen-reader software, Adobe Flex can interfere with automatic form-entry modes. It is important that any screen reader be set to manually enter and exit form-entry modes, rather than automatically controlling this feature. If not, the following interactions will not work.

Control	Example	Interaction
Button		• **Spacebar** to "click" the button.
Link		• **Spacebar** to follow link.
Tabs		• **Left** and **Right** arrow keys to navigate (i.e., set focus) along the tabs. They will light up when they have the focus. • **Spacebar** to select the focused tab.
Dropdown (Combo) Box		• **Up** and **Down** arrow keys to navigate and select value.
Nested Dropdown Box		• **Spacebar** to open the dropdown. • **Left** and **Right** arrow keys to open folders. • **Up** and **Down** arrow keys to highlight a value. • **Enter** key to select a value.
Check Box		• **Spacebar** to select/unselect
Accordion		With the focus on the Accordion panel: • **Page Up** and **Page Down** keys to move between them the panels. • **Tab** key to enter a panel. Once inside a panel: • **Up** and **Down** arrow keys to select a value within the panel. • To select multiple rows, hold down the **Ctrl** key and use the **Up**/**Down** arrow keys to highlight a row, then **Spacebar** to select the highlighted row. • To select contiguous rows, hold down the **Ctrl** key and use the **Up**/**Down** arrow keys to highlight a row, then **Shift**+**Spacebar** to select all rows between the selected row and the highlighted row.

Multi-Select List		• Change the selected row using the **Up** and **Down** arrow keys. • To select multiple rows, use **Ctrl**+**Up**/**Down** arrow keys to highlight a row, then Spacebar to select the highlighted row. • To select contiguous rows, use **Ctrl**+**Up**/**Down** arrow keys to highlight a row, then **Shift**+**Spacebar** to select all rows between the selected row and the highlighted row.

Map Interaction

MassTRAC uses a map to:

- Display the location of crashes and Liquor Licenses.
- Overlay other relevant spatial data (e.g., Police Stations, Bike Routes, Political Boundaries, etc.)
- Define the spatial extent of queries.

Users can use the keyboard to control the map content and extent as described in the table below.

Operation	Interaction
Zoom the map	The zoom scale of the map can be set through the map navigation bar using the **+** and **-** buttons or the zoom scale slider caret: • To zoom in using the **+** button, set the control focus to the **+** button and press the **Spacebar**. • To zoom out using the **-** button, set the control focus to the **-** button and press the **Spacebar**. • To set the zoom scale using the caret, set the control focus to the Caret and press the **Up** or **Down** keys.
Pan the map	**Left**, **Right**, **Up** and **Down** arrow keys to pan the map west, east, north and south respectively.
Display Crash locations	Set the focus on the "Crash Piecharts" checkbox, and press **Spacebar**.
Display Liquor License locations	Set the focus on the "Liquor License" checkbox, and press **Spacebar**.
Overlay other spatial data	• Set focus on Layers panel open button, and press **Spacebar** to open the panel. • Tab to set focus on the checkbox of the required spatial layer. • **Spacebar** to overlay/remove the layer on the map. • **Left**, **Right**, **Up** and **Down** arrow keys to scroll the contents of the panel.